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(54) Title: COMPOUNDS FOR IMMUNOTHERAPY AND DIAGNOSIS OF COLON CANCER AND METHODS FOR THEIR USE

(57) Abstract: Compositions and methods for the therapy and diagnosis of cancer, such as colon cancer, are disclosed. Compositions may comprise one or more colon tumor proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a colon tumor protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as colon cancer. Diagnostic methods based on detecting a colon tumor protein, or mRNA encoding such a protein, in a sample are also provided.

COMPOUNDS FOR IMMUNOTHERAPY AND DIAGNOSIS OF COLON CANCER AND METHODS FOR THEIR USE

TECHNICAL FIELD

The present invention relates generally to therapy and diagnosis of cancer, such as colon cancer. The invention is more specifically related to polypeptides comprising at least a portion of a colon tumor protein, and to polynucleotides encoding such polypeptides. Such polypeptides and polynucleotides may be used in vaccines and pharmaceutical compositions for prevention and treatment of colon cancer, and for the diagnosis and monitoring of such cancers.

BACKGROUND OF THE INVENTION

Cancer is a significant health problem throughout the world. Although advances have been made in detection and therapy of cancer, no vaccine or other universally successful method for prevention or treatment is currently available. Current therapies, which are generally based on a combination of chemotherapy or surgery and radiation, continue to prove inadequate in many patients.

Colon cancer is the second most frequently diagnosed malignancy in the United States as well as the second most common cause of cancer death. An estimated 95,600 new cases of colon cancer will be diagnosed in 1998, with an estimated 47,700 deaths. The five-year survival rate for patients with colorectal cancer detected in an early localized stage is 92%; unfortunately, only 37% of colorectal cancer is diagnosed at this stage. The survival rate drops to 64% if the cancer is allowed to spread to adjacent organs or lymph nodes, and to 7% in patients with distant metastases.

The prognosis of colon cancer is directly related to the degree of penetration of the tumor through the bowel wall and the presence or absence of nodal involvement, consequently, early detection and treatment are especially important. Currently, diagnosis is aided by the use of screening assays for fecal occult blood, sigmoidoscopy, colonoscopy and double contrast barium enemas. Treatment

regimens are determined by the type and stage of the cancer, and include surgery, radiation therapy and/or chemotherapy. Recurrence following surgery (the most common form of therapy) is a major problem and is often the ultimate cause of death. In spite of considerable research into therapies for the disease, colon cancer remains difficult to diagnose and treat. In spite of considerable research into therapies for these and other cancers, colon cancer remains difficult to diagnose and treat effectively. Accordingly, there is a need in the art for improved methods for detecting and treating such cancers. The present invention fulfills these needs and further provides other related advantages.

SUMMARY OF THE INVENTION

Briefly stated, the present invention provides compositions and methods for the diagnosis and therapy of cancer, such as colon cancer. In one aspect, the present invention provides polypeptides comprising at least a portion of a colon tumor protein, or a variant thereof . Certain portions and other variants are immunogenic, such that the ability of the variant to react with antigen-specific antisera is not substantially diminished. Within certain embodiments, the polypeptide comprises a sequence that is encoded by a polynucleotide sequence selected from the group consisting of: (a) sequences recited in SEQ ID NO: 1-121, 123-197, 205-630, 632-684, 686, 690-691 and 694-1081; (b) variants of a sequence recited in SEQ ID NO: 1-121, 123-197, 205-630 and 632-684, 686, 690-691 and 694-1081; and (c) complements of a sequence of (a) or (b).

The present invention further provides polynucleotides that encode a polypeptide as described above, or a portion thereof (such as a portion encoding at least 15 amino acid residues of a colon tumor protein), expression vectors comprising such polynucleotides and host cells transformed or transfected with such expression vectors.

Within other aspects, the present invention provides pharmaceutical compositions comprising a polypeptide or polynucleotide as described above and a physiologically acceptable carrier.

Within a related aspect of the present invention, vaccines are provided. Such vaccines comprise a polypeptide or polynucleotide as described above and an immunostimulant.

The present invention further provides pharmaceutical compositions that comprise: (a) an antibody or antigen-binding fragment thereof that specifically binds to a colon tumor protein; and (b) a physiologically acceptable carrier.

Within further aspects, the present invention provides pharmaceutical compositions comprising: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a pharmaceutically acceptable carrier or excipient. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B cells.

Within related aspects, vaccines are provided that comprise: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) an immunostimulant.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides encoding such fusion proteins.

Within related aspects, pharmaceutical compositions comprising a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a physiologically acceptable carrier are provided.

Vaccines are further provided, within other aspects, that comprise a fusion protein, or a polynucleotide encoding a fusion protein, in combination with an immunostimulant.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or vaccine as recited above.

The present invention further provides, within other aspects, methods for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a colon tumor protein, wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the protein from the sample.

Within related aspects, methods are provided for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated as described above.

Methods are further provided, within other aspects, for stimulating and/or expanding T cells specific for a colon tumor protein, comprising contacting T cells with one or more of: (i) a polypeptide as described above; (ii) a polynucleotide encoding such a polypeptide; and/or (iii) an antigen presenting cell that expresses such a polypeptide; under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells. Isolated T cell populations comprising T cells prepared as described above are also provided.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population as described above.

The present invention further provides methods for inhibiting the development of a cancer in a patient, comprising the steps of: (a) incubating $CD4^+$ and/or $CD8^+$ T cells isolated from a patient with one or more of: (i) a polypeptide comprising at least an immunogenic portion of a colon tumor protein; (ii) a polynucleotide encoding such a polypeptide; and (iii) an antigen-presenting cell that expresses such a polypeptide; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient. Proliferated cells may, but need not, be cloned prior to administration to the patient.

Within further aspects, the present invention provides methods for determining the presence or absence of a cancer in a patient, comprising: (a) contacting a biological sample obtained from a patient with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and (c) comparing the amount of polypeptide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within preferred embodiments, the binding agent is an antibody, more preferably a monoclonal antibody. The cancer may be colon cancer.

The present invention also provides, within other aspects, methods for monitoring the progression of a cancer in a patient. Such methods comprise the steps of: (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polypeptide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

The present invention further provides, within other aspects, methods for determining the presence or absence of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a colon tumor protein; (b) detecting in the sample a level of a polynucleotide, preferably mRNA, that hybridizes to the oligonucleotide; and (c) comparing the level of polynucleotide that hybridizes to the oligonucleotide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within certain embodiments, the amount of mRNA is detected via polymerase chain reaction using, for example, at least one oligonucleotide primer that hybridizes to a polynucleotide encoding a polypeptide as recited above, or a complement of such a polynucleotide. Within other embodiments, the amount of mRNA is detected using a hybridization technique, employing an oligonucleotide probe that hybridizes to a polynucleotide that encodes a polypeptide as recited above, or a complement of such a polynucleotide.

In related aspects, methods are provided for monitoring the progression of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a colon tumor protein; (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polynucleotide detected in step (c) with the amount

detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

Within further aspects, the present invention provides antibodies, such as monoclonal antibodies, that bind to a polypeptide as described above, as well as diagnostic kits comprising such antibodies. Diagnostic kits comprising one or more oligonucleotide probes or primers as described above are also provided.

These and other aspects of the present invention will become apparent upon reference to the following detailed description and attached figures. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

SEQUENCE IDENTIFIERS

SEQ ID NO: 1 is a first determined cDNA sequence for Contig 1, showing homology to Neutrophil Gelatinase Associated Lipocalin.

SEQ ID NO: 2 is the determined cDNA sequence for Contig 2, showing no significant homology to any known genes.

SEQ ID NO: 3 is the determined cDNA sequence for Contig 4, showing homology to Carcinoembryonic antigen.

SEQ ID NO: 4 is the determined cDNA sequence for Contig 5, showing homology to Carcinoembryonic antigen.

SEQ ID NO: 5 is the determined cDNA sequence for Contig 9, showing homology to Carcinoembryonic antigen.

SEQ ID NO: 6 is the determined cDNA sequence for Contig 52, showing homology to Carcinoembryonic antigen.

SEQ ID NO: 7 is the determined cDNA sequence for Contig 6, showing homology toVillin.

SEQ ID NO: 8 is the determined cDNA sequence for Contig 8, showing no significant homology to any known genes.

SEQ ID NO: 9 is the determined cDNA sequence for Contig 10, showing homology to Transforming Growth Factor (BIGH3).

SEQ ID NO: 10 is the determined cDNA sequence for Contig 19, showing homology to Transforming Growth Factor (BIGH3).

SEQ ID NO: 11 is the determined cDNA sequence for Contig 21, showing homology to Transforming Growth Factor (BIGH3).

SEQ ID NO: 12 is the determined cDNA sequence for Contig 11, showing homology to CO-029.

SEQ ID NO: 13 is the determined cDNA sequence for Contig 55, showing homology to CO-029.

SEQ ID NO: 14 is the determined cDNA sequence for Contig 12, showing homology to Chromosome 17, clone hRPC.1171_I_10, also referred to as C798P.

SEQ ID NO: 15 is the determined cDNA sequence for Contig 13, showing no significant homology to any known gene.

SEQ ID NO: 16 is the determined cDNA sequence for Contig 14, also referred to as 14261, showing no significant homology to any known gene.

SEQ ID NO: 17 is the determined cDNA sequence for Contig 15, showing homology to Ets-Related Transcription Factor (ERT).

SEQ ID NO: 18 is the determined cDNA sequence for Contig 16, showing homology to Chromosome 5, PAC clone 228g9 (LBNL H142).

SEQ ID NO: 19 is the determined cDNA sequence for Contig 24, showing homology to Chromosome 5, PAC clone 228g9 (LBNL H142).

SEQ ID NO: 20 is the determined cDNA sequence for Contig 17, showing homology to Cytokeratin.

SEQ ID NO: 21 is the determined cDNA sequence for Contig 18, showing homology to L1-Cadherin.

SEQ ID NO: 22 is the determined cDNA sequence for Contig 20, showing no significant homology to any known gene.

SEQ ID NO: 23 is the determined cDNA sequence for Contig 22, showing homology to Bumetanide-sensitive Na-K-Cl cotransporter (NKCCl).

SEQ ID NO: 24 is the determined cDNA sequence for Contig 23, showing no significant homology to any known gene.

SEQ ID NO: 25 is the determined cDNA sequence for Contig 25, showing homology to Macrophage Inflammatory Protein 3 alpha.

SEQ ID NO: 26 is the determined cDNA sequence for Contig 26, showing homology to Laminin.

SEQ ID NO: 27 is the determined cDNA sequence for Contig 48, showing homology to Laminin.

SEQ ID NO: 28 is the determined cDNA sequence for Contig 27, showing homology to Mytobularin (MTM1).

SEQ ID NO: 29 is the determined cDNA sequence for Contig 28, showing homology to Chromosome 16 BAC clone CIT987SK-A-363E6.

SEQ ID NO: 30 is the determined cDNA sequence for Contig 29, also referred to as C751P and 14247, showing no significant homology to any known gene, but partial homology to Rat GSK-3β-interacting protein Axil homolog.

SEQ ID NO: 31 is the determined cDNA sequence for Contig 30, showing homology to Zinc Finger Transcription Factor (ZNF207).

SEQ ID NO: 32 is the determined cDNA sequence for Contig 31, showing no significant homology to any known gene, but partial homology to Mus musculus GOB-4 homolog.

SEQ ID NO: 33 is the determined cDNA sequence for Contig 35, showing no significant homology to any known gene, but partial homology to Mus musculus GOB-4 homolog.

SEQ ID NO: 34 is the determined cDNA sequence for Contig 32, showing no significant homology to any known gene.

SEQ ID NO: 35 is the determined cDNA sequence for Contig 34, showing homology to Desmoglein 2.

SEQ ID NO: 36 is the determined cDNA sequence for Contig 36, showing no significant homology to any known gene.

SEQ ID NO: 37 is the determined cDNA sequence for Contig 37, showing homology to Putative Transmembrane Protein.

SEQ ID NO: 38 is the determined cDNA sequence for Contig 38, also referred to as C796P and 14219, showing no significant homology to any known gene.

SEQ ID NO: 39 is the determined cDNA sequence for Contig 40, showing homology to Nonspecific Cross-reacting Antigen.

SEQ ID NO: 40 is the determined cDNA sequence for Contig 41, also referred to as C799P and 14308, showing no significant homology to any known gene.

SEQ ID NO: 41 is the determined cDNA sequence for Contig 42, also referred to as C794P and 14309, showing no significant homology to any known gene.

SEQ ID NO: 42 is the determined cDNA sequence for Contig 43, showing homology to Chromosome 1 specific transcript KIAA0487.

SEQ ID NO: 43 is the determined cDNA sequence for Contig 45, showing homology to hMCM2.

SEQ ID NO: 44 is the determined cDNA sequence for Contig 46, showing homology to ETS2.

SEQ ID NO: 45 is the determined cDNA sequence for Contig 49, showing homology to Pump-1.

SEQ ID NO: 46 is the determined cDNA sequence for Contig 50, also referred to as C792P and 18323, showing no significant homology to any known gene.

SEQ ID NO: 47 is the determined cDNA sequence for Contig 51, also referred to as C795P and 14317, showing no significant homology to any known gene.

SEQ ID NO: 48 is the determined cDNA sequence for 11092, showing no significant homology to any known gene.

SEQ ID NO: 49 is the determined cDNA sequence for 11093, showing no significant homology to any known gene.

SEQ ID NO: 50 is the determined cDNA sequence for 11094, showing homology Human Putative Enterocyte Differentiation Protein.

SEQ ID NO: 51 is the determined cDNA sequence for 11095, showing homology to Human Transcriptional Corepressor hKAP1/TIF1B mRNA.

SEQ ID NO: 52 is the determined cDNA sequence for 11096, showing no significant homology to any known gene.

SEQ ID NO: 53 is the determined cDNA sequence for 11097, showing homology to Human Nonspecific Antigen.

SEQ ID NO: 54 is the determined cDNA sequence for 11098, showing no significant homology to any known gene.

SEQ ID NO: 55 is the determined cDNA sequence for 11099, showing homology to Human Pancreatic Secretory Inhibitor (PST) mRNA.

SEQ ID NO: 56 is the determined cDNA sequence for 11186, showing homology to Human Pancreatic Secretory Inhibitor (PST) mRNA.

SEQ ID NO: 57 is the determined cDNA sequence for 11101, showing homology to Human Chromosome X.

SEQ ID NO: 58 is the determined cDNA sequence for 11102, showing homology to Human Chromosome X.

SEQ ID NO: 59 is the determined cDNA sequence for 11103, showing no significant homology to any known gene.

SEQ ID NO: 60 is the determined cDNA sequence for 11174, showing no significant homology to any known gene.

SEQ ID NO: 61 is the determined cDNA sequence for 11104, showing homology to Human mRNA for KIAA0154.

SEQ ID NO: 62 is the determined cDNA sequence for 11105, showing homology toHuman Apurinic/Apyrimidinic Endonuclease (hap1)mRNA.

SEQ ID NO: 63 is the determined cDNA sequence for 11106, showing homology toHuman Chromosome 12p13.

SEQ ID NO: 64 is the determined cDNA sequence for 11107, showing homology to Human 90 kDa Heat Shock Protein.

SEQ ID NO: 65 is the determined cDNA sequence for 11108, showing no significant homology to any known gene.

SEQ ID NO: 66 is the determined cDNA sequence for 11112, showing no significant homology to any known gene.

SEQ ID NO: 67 is the determined cDNA sequence for 11115, showing no significant homology to any known gene.

SEQ ID NO: 68 is the determined cDNA sequence for 11117, showing no significant homology to any known gene.

SEQ ID NO: 69 is the determined cDNA sequence for 11118, showing no significant homology to any known gene.

SEQ ID NO: 70 is the determined cDNA sequence for 11119, showing homology to Human Elongation Factor 1-alpha.

SEQ ID NO: 71 is the determined cDNA sequence for 11121, showing homology to Human Lamin B Receptor (LBR) mRNA.

SEQ ID NO: 72 is the determined cDNA sequence for 11122, showing homology to H. sapiens mRNA for Novel Glucocorticoid.

SEQ ID NO: 73 is the determined cDNA sequence for 11123, showing homology to H. sapiens mRNA for snRNP protein B.

SEQ ID NO: 74 is the determined cDNA sequence for 11124, showing homology to Human Cisplatin Resistance Associated Beta-protein.

SEQ ID NO: 75 is the determined cDNA sequence for 11127, showing homology to M. musculus Calumenin mRNA.

SEQ ID NO: 76 is the determined cDNA sequence for 11128, showing homology to Human ras-related small GTP binding protein.

SEQ ID NO: 77 is the determined cDNA sequence for 11130, showing homology to Human Cosmid U169d2.

SEQ ID NO: 78 is the determined cDNA sequence for 11131, showing homology to H. sapiens mRNA for protein homologous to Elongation 1-g.

SEQ ID NO: 79 is the determined cDNA sequence for 11134, showing no significant homology to any known gene.

SEQ ID NO: 80 is the determined cDNA sequence for 11135, showing homology to H. sapiens Nieman-Pick (NPC1) mRNA.

SEQ ID NO: 81 is the determined cDNA sequence for 11137, showing homology to H. sapiens mRNA for Niecin b-chain.

SEQ ID NO: 82 is the determined cDNA sequence for 11138, showing homology to Human Endogenous Retroviral Protease mRNA.

SEQ ID NO: 83 is the determined cDNA sequence for 11139, showing homology to H. sapiens mRNA for DMBT1 protein.

SEQ ID NO: 84 is the determined cDNA sequence for 11140, showing homology to H. sapiens ras GTPase activating-like protein.

SEQ ID NO: 85 is the determined cDNA sequence for 11143, showing homology to Human Acidic Ribosomal Phosphoprotein PO mRNA.

SEQ ID NO: 86 is the determined cDNA sequence for 11144, showing homology to H. sapiens U21 mRNA.

SEQ ID NO: 87 is the determined cDNA sequence for 11145, showing homology to Human GTP-binding protein.

SEQ ID NO: 88 is the determined cDNA sequence for 11148, showing homology to H. sapiens U21 mRNA.

SEQ ID NO: 89 is the determined cDNA sequence for 11151, showing no significant homology to any known gene.

SEQ ID NO: 90 is the determined cDNA sequence for 11154, showing no significant homology to any known gene.

SEQ ID NO: 91 is the determined cDNA sequence for 11156, showing homology to H. sapiens Ribosomal Protein L27.

SEQ ID NO: 92 is the determined cDNA sequence for 11157, showing homology to H. sapiens Ribosomal Protein L27.

SEQ ID NO: 93 is the determined cDNA sequence for 11158, showing no significant homology to any known gene.

SEQ ID NO: 94 is the determined cDNA sequence for 11162, showing homology to Ag-X antigen.

SEQ ID NO: 95 is the determined cDNA sequence for 11164, showing homology to H. sapiens mRNA for Signal Recognition Protein sub14.

SEQ ID NO: 96 is the determined cDNA sequence for 11165, showing homology to Human PAC 204e5/127h14.

SEQ ID NO: 97 is the determined cDNA sequence for 11166, showing homology to Human mRNA for KIAA0108.

SEQ ID NO: 98 is the determined cDNA sequence for 11167, showing homology to H. sapiens mRNA for Neutrophil Gelatinase assct. Lipocalin.

SEQ ID NO: 99 is the determined cDNA sequence for 11168, showing no significant homology to any known gene.

SEQ ID NO: 100 is the determined cDNA sequence for 11172, showing no significant homology to any known gene.

SEQ ID NO: 101 is the determined cDNA sequence for 11175, showing no significant homology to any known gene.

SEQ ID NO: 102 is the determined cDNA sequence for 11176, showing homology to Human maspin mRNA.

SEQ ID NO: 103 is the determined cDNA sequence for 11177, showing homology to Human Carcinoembryonic Antigen.

SEQ ID NO: 104 is the determined cDNA sequence for 11178, showing homology to Human A-Tubulin mRNA.

SEQ ID NO: 105 is the determined cDNA sequence for 11179, showing homology to Human mRNA for proton-ATPase-like protein.

SEQ ID NO: 106 is the determined cDNA sequence for 11180, showing homology to Human HepG2 3' region cDNA clone hmd.

SEQ ID NO: 107 is the determined cDNA sequence for 11182, showing homology to Human MHC homologous to Chicken B-Complex Protein.

SEQ ID NO: 108 is the determined cDNA sequence for 11183, showing homology to Human High Mobility Group Box (SSRP1) mRNA.

SEQ ID NO: 109 is the determined cDNA sequence for 11184, showing no significant homology to any known gene.

SEQ ID NO: 110 is the determined cDNA sequence for 11185, showing no significant homology to any known gene.

SEQ ID NO: 111 is the determined cDNA sequence for 11187, showing no significant homology to any known gene.

SEQ ID NO: 112 is the determined cDNA sequence for 11190, showing homology to Human Replication Protein A 70kDa.

SEQ ID NO: 113 is the determined cDNA sequence for Contig 47, also referred to as C797P, showing homology to Human Chromosome X clone bWXD342.

SEQ ID NO: 114 is the determined cDNA sequence for Contig 7, showing homology to Equilibrative Nucleoside Transporter 2 (ent2).

SEQ ID NO: 115 is the determined cDNA sequence for 14235.1, also referred to as C791P, showing homology to H. sapiens chromosome 21 derived BAC containing ets-2 gene.

SEQ ID NO: 116 is the determined cDNA sequence for 14287.2, showing no significant homology to any known gene, but some degree of homology to Putative Transmembrane Protein.

SEQ ID NO: 117 is the determined cDNA sequence for 14233.1, also referred to as Contig 48, showing no significant homology to any known gene.

SEQ ID NO: 118 is the determined cDNA sequence for 14298.2, also referred to as C793P, showing no significant homology to any known gene.

SEQ ID NO: 119 is the determined cDNA sequence for 14372, also referred to as Contig 44, showing no significant homology to any known gene.

SEQ ID NO: 120 is the determined cDNA sequence for 14295, showing homology to secreted cement gland protein XAG-2 homolog.

SEQ ID NO: 121 is the determined full-length cDNA sequence for a clone showing homology to Beta IG-H3.

SEQ ID NO: 122 is the predicted amino acid sequence for the clone of SEQ ID NO: 121.

SEQ ID NO: 123 is a longer determined cDNA sequence for C751P.

SEQ ID NO: 124 is a longer determined cDNA sequence for C791P.

SEQ ID NO: 125 is a longer determined cDNA sequence for C792P.

SEQ ID NO: 126 is a longer determined cDNA sequence for C793P.

SEQ ID NO: 127 is a longer determined cDNA sequence for C794P.

SEQ ID NO: 128 is a longer determined cDNA sequence for C795P.

SEQ ID NO: 129 is a longer determined cDNA sequence for C796P.

SEQ ID NO: 130 is a longer determined cDNA sequence for C797P.

SEQ ID NO: 131 is a longer determined cDNA sequence for C798P.

SEQ ID NO: 132 is a longer determined cDNA sequence for C799P.

SEQ ID NO: 133 is a first partial determined cDNA sequence for CoSub-3 (also known as 23569).

SEQ ID NO: 134 is a second partial determined cDNA sequence for CoSub-3 (also known as 23569).

SEQ ID NO: 135 is a first partial determined cDNA sequence for CoSub-13 (also known as 23579).

SEQ ID NO: 136 is a second partial determined cDNA sequence for CoSub-13 (also known as 23579).

SEQ ID NO: 137 is the determined cDNA sequence for CoSub-17 (also known as 23583).

SEQ ID NO: 138 is the determined cDNA sequence for CoSub-19 (also known as 23585).

SEQ ID NO: 139 is the determined cDNA sequence for CoSub-22 (also known as 23714).

SEQ ID NO: 140 is the determined cDNA sequence for CoSub-23 (also known as 23715).

SEQ ID NO: 141 is the determined cDNA sequence for CoSub-26 (also known as 23717).

SEQ ID NO: 142 is the determined cDNA sequence for CoSub-33 (also known as 23724).

SEQ ID NO: 143 is the determined cDNA sequence for CoSub-34 (also known as 23725).

SEQ ID NO: 144 is the determined cDNA sequence for CoSub-35 (also known as 23726).

SEQ ID NO: 145 is the determined cDNA sequence for CoSub-37 (also known as 23728).

SEQ ID NO: 146 is the determined cDNA sequence for CoSub-39 (also known as 23730).

SEQ ID NO: 147 is the determined cDNA sequence for CoSub-42 (also known as 23766).

SEQ ID NO: 148 is the determined cDNA sequence for CoSub-44 (also known as 23768).

SEQ ID NO: 149 is the determined cDNA sequence for CoSub-47 (also known as 23771).

SEQ ID NO: 150 is the determined cDNA sequence for CoSub-54 (also known as 23778).

SEQ ID NO: 151 is the determined cDNA sequence for CoSub-55 (also known as 23779).

SEQ ID NO: 152 is the determined cDNA sequence for CT1 (also known as 24099).

SEQ ID NO: 153 is the determined cDNA sequence for CT2 (also known as 24100).

SEQ ID NO: 154 is the determined cDNA sequence for CT3 (also known as 24101).

SEQ ID NO: 155 is the determined cDNA sequence for CT6 (also known as 24104).

SEQ ID NO: 156 is the determined cDNA sequence for CT7 (also known as 24105).

SEQ ID NO: 157 is the determined cDNA sequence for CT12 (also known as 24110).

SEQ ID NO: 158 is the determined cDNA sequence for CT13 (also known as 24111).

SEQ ID NO: 159 is the determined cDNA sequence for CT14 (also known as 24112).

SEQ ID NO: 160 is the determined cDNA sequence for CT15 (also known as 24113).

SEQ ID NO: 161 is the determined cDNA sequence for CT17 (also known as 24115).

SEQ ID NO: 162 is the determined cDNA sequence for CT18 (also known as 24116).

SEQ ID NO: 163 is the determined cDNA sequence for CT22 (also known as 23848).

SEQ ID NO: 164 is the determined cDNA sequence for CT24 (also known as 23849).

SEQ ID NO: 165 is the determined cDNA sequence for CT31 (also known as 23854).

SEQ ID NO: 166 is the determined cDNA sequence for CT34 (also known as 23856).

SEQ ID NO: 167 is the determined cDNA sequence for CT37 (also known as 23859).

SEQ ID NO: 168 is the determined cDNA sequence for CT39 (also known as 23860).

SEQ ID NO: 169 is the determined cDNA sequence for CT40 (also known as 23861).

SEQ ID NO: 170 is the determined cDNA sequence for CT51 (also known as 24130).

SEQ ID NO: 171 is the determined cDNA sequence for CT53 (also known as 24132).

SEQ ID NO: 172 is the determined cDNA sequence for CT63 (also known as 24595).

SEQ ID NO: 173 is the determined cDNA sequence for CT88 (also known as 24608).

SEQ ID NO: 174 is the determined cDNA sequence for CT92 (also known as 24800).

SEQ ID NO: 175 is the determined cDNA sequence for CT94 (also known as 24802).

SEQ ID NO: 176 is the determined cDNA sequence for CT102 (also known as 24805).

SEQ ID NO: 177 is the determined cDNA sequence for CT103 (also known as 24806).

SEQ ID NO: 178 is the determined cDNA sequence for CT111 (also known as 25520).

SEQ ID NO: 179 is the determined cDNA sequence for CT118 (also known as 25522).

SEQ ID NO: 180 is the determined cDNA sequence for CT121 (also known as 25523).

SEQ ID NO: 181 is the determined cDNA sequence for CT126 (also known as 25527).

SEQ ID NO: 182 is the determined cDNA sequence for CT135 (also known as 25534).

SEQ ID NO: 183 is the determined cDNA sequence for CT140 (also known as 25537).

SEQ ID NO: 184 is the determined cDNA sequence for CT145 (also known as 25542).

SEQ ID NO: 185 is the determined cDNA sequence for CT147 (also known as 25543).

SEQ ID NO: 186 is the determined cDNA sequence for CT148 (also known as 25544).

SEQ ID NO: 187 is the determined cDNA sequence for CT502 (also known as 26420).

SEQ ID NO: 188 is the determined cDNA sequence for CT507 (also known as 26425).

SEQ ID NO: 189 is the determined cDNA sequence for CT521 (also known as 27366).

SEQ ID NO: 190 is the determined cDNA sequence for CT544 (also known as 27375).

SEQ ID NO: 191 is the determined cDNA sequence for CT577 (also known as 27385).

SEQ ID NO: 192 is the determined cDNA sequence for CT580 (also known as 27387).

SEQ ID NO: 193 is the determined cDNA sequence for CT594 (also known as 27540).

SEQ ID NO: 194 is the determined cDNA sequence for CT606 (also known as 27547).

SEQ ID NO: 195 is the determined cDNA sequence for CT607 (also known as 27548).

SEQ ID NO: 196 is the determined cDNA sequence for CT599 (also known as 27903).

SEQ ID NO: 197 is the determined cDNA sequence for CT632 (also known as 27922).

SEQ ID NO: 198 is the predicted amino acid sequence for CT502 (SEQ ID NO: 187).

SEQ ID NO: 199 is the predicted amino acid sequence for CT507 (SEQ ID NO: 188).

SEQ ID NO: 200 is the predicted amino acid sequence for CT521 (SEQ ID NO: 189).

SEQ ID NO: 201 is the predicted amino acid sequence for CT544 (SEQ ID NO: 190).

SEQ ID NO: 202 is the predicted amino acid sequence for CT606 (SEQ ID NO: 194).

SEQ ID NO: 203 is the predicted amino acid sequence for CT607 (SEQ ID NO: 195).

SEQ ID NO: 204 is the predicted amino acid sequence for CT632 (SEQ ID NO: 197).

SEQ ID NO: 205 is the determined cDNA sequence for clone 25244.

SEQ ID NO: 206 is the determined cDNA sequence for clone 25245.

SEQ ID NO: 207 is the determined cDNA sequence for clone 25246.

SEQ ID NO: 208 is the determined cDNA sequence for clone 25248.

SEQ ID NO: 209 is the determined cDNA sequence for clone 25249.

SEQ ID NO: 210 is the determined cDNA sequence for clone 25250.

SEQ ID NO: 211 is the determined cDNA sequence for clone 25251.

SEQ ID NO: 212 is the determined cDNA sequence for clone 25252.

SEQ ID NO: 213 is the determined cDNA sequence for clone 25253.

SEQ ID NO: 214 is the determined cDNA sequence for clone 25254.

SEQ ID NO: 215 is the determined cDNA sequence for clone 25255.

SEQ ID NO: 216 is the determined cDNA sequence for clone 25256.

SEQ ID NO: 217 is the determined cDNA sequence for clone 25257.

SEQ ID NO: 218 is the determined cDNA sequence for clone 25259.

SEQ ID NO: 219 is the determined cDNA sequence for clone 25260.

SEQ ID NO: 220 is the determined cDNA sequence for clone 25261.

SEQ ID NO: 221 is the determined cDNA sequence for clone 25262.

SEQ ID NO: 222 is the determined cDNA sequence for clone 25263.

SEQ ID NO: 223 is the determined cDNA sequence for clone 25264.

SEQ ID NO: 224 is the determined cDNA sequence for clone 25265.

SEQ ID NO: 225 is the determined cDNA sequence for clone 25266.

SEQ ID NO: 226 is the determined cDNA sequence for clone 25267.

SEQ ID NO: 227 is the determined cDNA sequence for clone 25268.

SEQ ID NO: 228 is the determined cDNA sequence for clone 25269.

SEQ ID NO: 229 is the determined cDNA sequence for clone 25271.

SEQ ID NO: 230 is the determined cDNA sequence for clone 25272.

SEQ ID NO: 231 is the determined cDNA sequence for clone 25273.

SEQ ID NO: 232 is the determined cDNA sequence for clone 25274.

SEQ ID NO: 233 is the determined cDNA sequence for clone 25275.

SEQ ID NO: 234 is the determined cDNA sequence for clone 25276.

SEQ ID NO: 235 is the determined cDNA sequence for clone 25277.

SEQ ID NO: 236 is the determined cDNA sequence for clone 25278.

SEQ ID NO: 237 is the determined cDNA sequence for clone 25280.

SEQ ID NO: 238 is the determined cDNA sequence for clone 25281.

SEQ ID NO: 239 is the determined cDNA sequence for clone 25282.

SEQ ID NO: 240 is the determined cDNA sequence for clone 25283.

SEQ ID NO: 241 is the determined cDNA sequence for clone 25284.

SEQ ID NO: 242 is the determined cDNA sequence for clone 25285.

SEQ ID NO: 243 is the determined cDNA sequence for clone 25286.
SEQ ID NO: 244 is the determined cDNA sequence for clone 25287.
SEQ ID NO: 245 is the determined cDNA sequence for clone 25288.
SEQ ID NO: 246 is the determined cDNA sequence for clone 25289.
SEQ ID NO: 247 is the determined cDNA sequence for clone 25290.
SEQ ID NO: 248 is the determined cDNA sequence for clone 25291.
SEQ ID NO: 249 is the determined cDNA sequence for clone 25292.
SEQ ID NO: 250 is the determined cDNA sequence for clone 25293.
SEQ ID NO: 251 is the determined cDNA sequence for clone 25294.
SEQ ID NO: 252 is the determined cDNA sequence for clone 25295.
SEQ ID NO: 253 is the determined cDNA sequence for clone 25296.
SEQ ID NO: 254 is the determined cDNA sequence for clone 25297.
SEQ ID NO: 255 is the determined cDNA sequence for clone 25418.
SEQ ID NO: 256 is the determined cDNA sequence for clone 25419.
SEQ ID NO: 257 is the determined cDNA sequence for clone 25420.
SEQ ID NO: 258 is the determined cDNA sequence for clone 25421.
SEQ ID NO: 259 is the determined cDNA sequence for clone 25422.
SEQ ID NO: 260 is the determined cDNA sequence for clone 25423.
SEQ ID NO: 261 is the determined cDNA sequence for clone 25424.
SEQ ID NO: 262 is the determined cDNA sequence for clone 25426.
SEQ ID NO: 263 is the determined cDNA sequence for clone 25427.
SEQ ID NO: 264 is the determined cDNA sequence for clone 25428.
SEQ ID NO: 265 is the determined cDNA sequence for clone 25429.
SEQ ID NO: 266 is the determined cDNA sequence for clone 25430.
SEQ ID NO: 267 is the determined cDNA sequence for clone 25431.
SEQ ID NO: 268 is the determined cDNA sequence for clone 25432.
SEQ ID NO: 269 is the determined cDNA sequence for clone 25433.
SEQ ID NO: 270 is the determined cDNA sequence for clone 25434.
SEQ ID NO: 271 is the determined cDNA sequence for clone 25435.
SEQ ID NO: 272 is the determined cDNA sequence for clone 25436.
SEQ ID NO: 273 is the determined cDNA sequence for clone 25437.

SEQ ID NO: 274 is the determined cDNA sequence for clone 25438.

SEQ ID NO: 275 is the determined cDNA sequence for clone 25439.

SEQ ID NO: 276 is the determined cDNA sequence for clone 25440.

SEQ ID NO: 277 is the determined cDNA sequence for clone 25441.

SEQ ID NO: 278 is the determined cDNA sequence for clone 25442.

SEQ ID NO: 279 is the determined cDNA sequence for clone 25443.

SEQ ID NO: 280 is the determined cDNA sequence for clone 25444.

SEQ ID NO: 281 is the determined cDNA sequence for clone 25445.

SEQ ID NO: 282 is the determined cDNA sequence for clone 25446.

SEQ ID NO: 283 is the determined cDNA sequence for clone 25447.

SEQ ID NO: 284 is the determined cDNA sequence for clone 25448.

SEQ ID NO: 285 is the determined cDNA sequence for clone 25844.

SEQ ID NO: 286 is the determined cDNA sequence for clone 25845.

SEQ ID NO: 287 is the determined cDNA sequence for clone 25846.

SEQ ID NO: 288 is the determined cDNA sequence for clone 25847.

SEQ ID NO: 289 is the determined cDNA sequence for clone 25848.

SEQ ID NO: 290 is the determined cDNA sequence for clone 25850.

SEQ ID NO: 291 is the determined cDNA sequence for clone 25851.

SEQ ID NO: 292 is the determined cDNA sequence for clone 25852.

SEQ ID NO: 293 is the determined cDNA sequence for clone 25853.

SEQ ID NO: 294 is the determined cDNA sequence for clone 25854.

SEQ ID NO: 295 is the determined cDNA sequence for clone 25855.

SEQ ID NO: 296 is the determined cDNA sequence for clone 25856.

SEQ ID NO: 297 is the determined cDNA sequence for clone 25857.

SEQ ID NO: 298 is the determined cDNA sequence for clone 25858.

SEQ ID NO: 299 is the determined cDNA sequence for clone 25859.

SEQ ID NO: 300 is the determined cDNA sequence for clone 25860.

SEQ ID NO: 301 is the determined cDNA sequence for clone 25861.

SEQ ID NO: 302 is the determined cDNA sequence for clone 25862.

SEQ ID NO: 303 is the determined cDNA sequence for clone 25863.

SEQ ID NO: 304 is the determined cDNA sequence for clone 25864.

SEQ ID NO: 305 is the determined cDNA sequence for clone 25865.

SEQ ID NO: 306 is the determined cDNA sequence for clone 25866.

SEQ ID NO: 307 is the determined cDNA sequence for clone 25867.

SEQ ID NO: 308 is the determined cDNA sequence for clone 25868.

SEQ ID NO: 309 is the determined cDNA sequence for clone 25869.

SEQ ID NO: 310 is the determined cDNA sequence for clone 25870.

SEQ ID NO: 311 is the determined cDNA sequence for clone 25871.

SEQ ID NO: 312 is the determined cDNA sequence for clone 25872.

SEQ ID NO: 313 is the determined cDNA sequence for clone 25873.

SEQ ID NO: 314 is the determined cDNA sequence for clone 25875.

SEQ ID NO: 315 is the determined cDNA sequence for clone 25876.

SEQ ID NO: 316 is the determined cDNA sequence for clone 25877.

SEQ ID NO: 317 is the determined cDNA sequence for clone 25878.

SEQ ID NO: 318 is the determined cDNA sequence for clone 25879.

SEQ ID NO: 319 is the determined cDNA sequence for clone 25880.

SEQ ID NO: 320 is the determined cDNA sequence for clone 25881.

SEQ ID NO: 321 is the determined cDNA sequence for clone 25882.

SEQ ID NO: 322 is the determined cDNA sequence for clone 25883.

SEQ ID NO: 323 is the determined cDNA sequence for clone 25884.

SEQ ID NO: 324 is the determined cDNA sequence for clone 25885.

SEQ ID NO: 325 is the determined cDNA sequence for clone 25886.

SEQ ID NO: 326 is the determined cDNA sequence for clone 25887.

SEQ ID NO: 327 is the determined cDNA sequence for clone 25888.

SEQ ID NO: 328 is the determined cDNA sequence for clone 25889.

SEQ ID NO: 329 is the determined cDNA sequence for clone 25890.

SEQ ID NO: 330 is the determined cDNA sequence for clone 25892.

SEQ ID NO: 331 is the determined cDNA sequence for clone 25894.

SEQ ID NO: 332 is the determined cDNA sequence for clone 25895.

SEQ ID NO: 333 is the determined cDNA sequence for clone 25896.

SEQ ID NO: 334 is the determined cDNA sequence for clone 25897.

SEQ ID NO: 335 is the determined cDNA sequence for clone 25899.

SEQ ID NO: 336 is the determined cDNA sequence for clone 25900.

SEQ ID NO: 337 is the determined cDNA sequence for clone 25901.

SEQ ID NO: 338 is the determined cDNA sequence for clone 25902.

SEQ ID NO: 339 is the determined cDNA sequence for clone 25903.

SEQ ID NO: 340 is the determined cDNA sequence for clone 25904.

SEQ ID NO: 341 is the determined cDNA sequence for clone 25906.

SEQ ID NO: 342 is the determined cDNA sequence for clone 25907.

SEQ ID NO: 343 is the determined cDNA sequence for clone 25908.

SEQ ID NO: 344 is the determined cDNA sequence for clone 25909.

SEQ ID NO: 345 is the determined cDNA sequence for clone 25910.

SEQ ID NO: 346 is the determined cDNA sequence for clone 25911.

SEQ ID NO: 347 is the determined cDNA sequence for clone 25912.

SEQ ID NO: 348 is the determined cDNA sequence for clone 25913.

SEQ ID NO: 349 is the determined cDNA sequence for clone 25914.

SEQ ID NO: 350 is the determined cDNA sequence for clone 25915.

SEQ ID NO: 351 is the determined cDNA sequence for clone 25916.

SEQ ID NO: 352 is the determined cDNA sequence for clone 25917.

SEQ ID NO: 353 is the determined cDNA sequence for clone 25918.

SEQ ID NO: 354 is the determined cDNA sequence for clone 25919.

SEQ ID NO: 355 is the determined cDNA sequence for clone 25920.

SEQ ID NO: 356 is the determined cDNA sequence for clone 25921.

SEQ ID NO: 357 is the determined cDNA sequence for clone 25922.

SEQ ID NO: 358 is the determined cDNA sequence for clone 25924.

SEQ ID NO: 359 is the determined cDNA sequence for clone 25925.

SEQ ID NO: 360 is the determined cDNA sequence for clone 25926.

SEQ ID NO: 361 is the determined cDNA sequence for clone 25927.

SEQ ID NO: 362 is the determined cDNA sequence for clone 25928.

SEQ ID NO: 363 is the determined cDNA sequence for clone 25929.

SEQ ID NO: 364 is the determined cDNA sequence for clone 25930.

SEQ ID NO: 365 is the determined cDNA sequence for clone 25931.

SEQ ID NO: 366 is the determined cDNA sequence for clone 25932.

SEQ ID NO: 367 is the determined cDNA sequence for clone 25933.

SEQ ID NO: 368 is the determined cDNA sequence for clone 25934.

SEQ ID NO: 369 is the determined cDNA sequence for clone 25935.

SEQ ID NO: 370 is the determined cDNA sequence for clone 25936.

SEQ ID NO: 371 is the determined cDNA sequence for clone 25939.

SEQ ID NO: 372 is the determined cDNA sequence for clone 32016.

SEQ ID NO: 373 is the determined cDNA sequence for clone 32021.

SEQ ID NO: 374 is the determined cDNA sequence for clone 31993.

SEQ ID NO: 375 is the determined cDNA sequence for clone 31997.

SEQ ID NO: 376 is the determined cDNA sequence for clone 31942.

SEQ ID NO: 377 is the determined cDNA sequence for clone 31937.

SEQ ID NO: 378 is the determined cDNA sequence for clone 31952.

SEQ ID NO: 379 is the determined cDNA sequence for clone 31992.

SEQ ID NO: 380 is the determined cDNA sequence for clone 31961.

SEQ ID NO: 381 is the determined cDNA sequence for clone 31964.

SEQ ID NO: 382 is the determined cDNA sequence for clone 32005.

SEQ ID NO: 383 is the determined cDNA sequence for clone 31980.

SEQ ID NO: 384 is the determined cDNA sequence for clone 31940.

SEQ ID NO: 385 is the determined cDNA sequence for clone 32004.

SEQ ID NO: 386 is the determined cDNA sequence for clone 31956.

SEQ ID NO: 387 is the determined cDNA sequence for clone 31934.

SEQ ID NO: 388 is the determined cDNA sequence for clone 31998.

SEQ ID NO: 389 is the determined cDNA sequence for clone 31973.

SEQ ID NO: 390 is the determined cDNA sequence for clone 31976.

SEQ ID NO: 391 is the determined cDNA sequence for clone 31988.

SEQ ID NO: 392 is the determined cDNA sequence for clone 31948.

SEQ ID NO: 393 is the determined cDNA sequence for clone 32013.

SEQ ID NO: 394 is the determined cDNA sequence for clone 31986.

SEQ ID NO: 395 is the determined cDNA sequence for clone 31954.

SEQ ID NO: 396 is the determined cDNA sequence for clone 31987.

SEQ ID NO: 397 is the determined cDNA sequence for clone 32029.

SEQ ID NO: 398 is the determined cDNA sequence for clone 32028.

SEQ ID NO: 399 is the determined cDNA sequence for clone 32012.

SEQ ID NO: 400 is the determined cDNA sequence for clone 31959.

SEQ ID NO: 401 is the determined cDNA sequence for clone 32027.

SEQ ID NO: 402 is the determined cDNA sequence for clone 31957.

SEQ ID NO: 403 is the determined cDNA sequence for clone 31950.

SEQ ID NO: 404 is the determined cDNA sequence for clone 32011.

SEQ ID NO: 405 is the determined cDNA sequence for clone 32022.

SEQ ID NO: 406 is the determined cDNA sequence for clone 32014.

SEQ ID NO: 407 is the determined cDNA sequence for clone 31963.

SEQ ID NO: 408 is the determined cDNA sequence for clone 31989.

SEQ ID NO: 409 is the determined cDNA sequence for clone 32015.

SEQ ID NO: 410 is the determined cDNA sequence for clone 32002.

SEQ ID NO: 411 is the determined cDNA sequence for clone 31939.

SEQ ID NO: 412 is the determined cDNA sequence for clone 32003.

SEQ ID NO: 413 is the determined cDNA sequence for clone 31936.

SEQ ID NO: 414 is the determined cDNA sequence for clone 32007.

SEQ ID NO: 415 is the determined cDNA sequence for clone 31965.

SEQ ID NO: 416 is the determined cDNA sequence for clone 31935.

SEQ ID NO: 417 is the determined cDNA sequence for clone 32008.

SEQ ID NO: 418 is the determined cDNA sequence for clone 31966.

SEQ ID NO: 419 is the determined cDNA sequence for clone 32020.

SEQ ID NO: 420 is the determined cDNA sequence for clone 31971.

SEQ ID NO: 421 is the determined cDNA sequence for clone 31977.

SEQ ID NO: 422 is the determined cDNA sequence for clone 31985.

SEQ ID NO: 423 is the determined cDNA sequence for clone 32023.

SEQ ID NO: 424 is the determined cDNA sequence for clone 31981.

SEQ ID NO: 425 is the determined cDNA sequence for clone 32006.

SEQ ID NO: 426 is the determined cDNA sequence for clone 31991.

SEQ ID NO: 427 is the determined cDNA sequence for clone 31995.

SEQ ID NO: 428 is the determined cDNA sequence for clone 32000.

SEQ ID NO: 429 is the determined cDNA sequence for clone 31990.

SEQ ID NO: 430 is the determined cDNA sequence for clone 31946.

SEQ ID NO: 431 is the determined cDNA sequence for clone 31938.

SEQ ID NO: 432 is the determined cDNA sequence for clone 31941.

SEQ ID NO: 433 is the determined cDNA sequence for clone 31982.

SEQ ID NO: 434 is the determined cDNA sequence for clone 31996.

SEQ ID NO: 435 is the determined cDNA sequence for clone 32010.

SEQ ID NO: 436 is the determined cDNA sequence for clone 31974.

SEQ ID NO: 437 is the determined cDNA sequence for clone 31983.

SEQ ID NO: 438 is the determined cDNA sequence for clone 31999.

SEQ ID NO: 439 is the determined cDNA sequence for clone 31949.

SEQ ID NO: 440 is the determined cDNA sequence for clone 31947.

SEQ ID NO: 441 is the determined cDNA sequence for clone 31994.

SEQ ID NO: 442 is the determined cDNA sequence for clone 31958.

SEQ ID NO: 443 is the determined cDNA sequence for clone 31975.

SEQ ID NO: 444 is the determined cDNA sequence for clone 31984.

SEQ ID NO: 445 is the determined cDNA sequence for clone 32024.

SEQ ID NO: 446 is the determined cDNA sequence for clone 31972.

SEQ ID NO: 447 is the determined cDNA sequence for clone 31943.

SEQ ID NO: 448 is the determined cDNA sequence for clone 32018.

SEQ ID NO: 449 is the determined cDNA sequence for clone 32026.

SEQ ID NO: 450 is the determined cDNA sequence for clone 32009.

SEQ ID NO: 451 is the determined cDNA sequence for clone 32019.

SEQ ID NO: 452 is the determined cDNA sequence for clone 32025.

SEQ ID NO: 453 is the determined cDNA sequence for clone 31967.

SEQ ID NO: 454 is the determined cDNA sequence for clone 31968.

SEQ ID NO: 455 is the determined cDNA sequence for clone 31955.

SEQ ID NO: 456 is the determined cDNA sequence for clone 31951.

SEQ ID NO: 457 is the determined cDNA sequence for clone 31970.

SEQ ID NO: 458 is the determined cDNA sequence for clone 31962.

SEQ ID NO: 459 is the determined cDNA sequence for clone 32001.

SEQ ID NO: 460 is the determined cDNA sequence for clone 31953.
SEQ ID NO: 461 is the determined cDNA sequence for clone 31944.
SEQ ID NO: 462 is the determined cDNA sequence for clone 31825.
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SEQ ID NO: 465 is the determined cDNA sequence for clone 31841.
SEQ ID NO: 466 is the determined cDNA sequence for clone 31847.
SEQ ID NO: 467 is the determined cDNA sequence for clone 31850.
SEQ ID NO: 468 is the determined cDNA sequence for clone 31852.
SEQ ID NO: 469 is the determined cDNA sequence for clone 31855.
SEQ ID NO: 470 is the determined cDNA sequence for clone 31858.
SEQ ID NO: 471 is the determined cDNA sequence for clone 31861.
SEQ ID NO: 472 is the determined cDNA sequence for clone 31868.
SEQ ID NO: 473 is the determined cDNA sequence for clone 31870.
SEQ ID NO: 474 is the determined cDNA sequence for clone 31872.
SEQ ID NO: 475 is the determined cDNA sequence for clone 31873.
SEQ ID NO: 476 is the determined cDNA sequence for clone 31877.
SEQ ID NO: 477 is the determined cDNA sequence for clone 31878.
SEQ ID NO: 478 is the determined cDNA sequence for clone 31885.
SEQ ID NO: 479 is the determined cDNA sequence for clone 31888.
SEQ ID NO: 480 is the determined cDNA sequence for clone 31890.
SEQ ID NO: 481 is the determined cDNA sequence for clone 31893.
SEQ ID NO: 482 is the determined cDNA sequence for clone 31898.
SEQ ID NO: 483 is the determined cDNA sequence for clone 31901.
SEQ ID NO: 484 is the determined cDNA sequence for clone 31909.
SEQ ID NO: 485 is the determined cDNA sequence for clone 31910.
SEQ ID NO: 486 is the determined cDNA sequence for clone 31914.
SEQ ID NO: 487 is the determined cDNA sequence for contig 1.
SEQ ID NO: 488 is the determined cDNA sequence for contig 2.
SEQ ID NO: 489 is the determined cDNA sequence for contig 3.
SEQ ID NO: 490 is the determined cDNA sequence for contig 4.

SEQ ID NO: 491 is the determined cDNA sequence for contig 5.

SEQ ID NO: 492 is the determined cDNA sequence for contig 6.

SEQ ID NO: 493 is the determined cDNA sequence for contig 7.

SEQ ID NO: 494 is the determined cDNA sequence for contig 8.

SEQ ID NO: 495 is the determined cDNA sequence for contig 9.

SEQ ID NO: 496 is the determined cDNA sequence for contig 10.

SEQ ID NO: 497 is the determined cDNA sequence for contig 11

SEQ ID NO: 498 is the determined cDNA sequence for contig 12

SEQ ID NO: 499 is the determined cDNA sequence for contig 13.

SEQ ID NO: 500 is the determined cDNA sequence for contig 14.

SEQ ID NO: 501 is the determined cDNA sequence for contig 15.

SEQ ID NO: 502 is the determined cDNA sequence for contig 16.

SEQ ID NO: 503 is the determined cDNA sequence for contig 17.

SEQ ID NO: 504 is the determined cDNA sequence for contig 18.

SEQ ID NO: 505 is the determined cDNA sequence for contig 19.

SEQ ID NO: 506 is the determined cDNA sequence for contig 20.

SEQ ID NO: 507 is the determined cDNA sequence for contig 21.

SEQ ID NO: 508 is the determined cDNA sequence for contig 22.

SEQ ID NO: 509 is the determined cDNA sequence for contig 23.

SEQ ID NO: 510 is the determined cDNA sequence for contig 24.

SEQ ID NO: 511 is the determined cDNA sequence for contig 25.

SEQ ID NO: 512 is the determined cDNA sequence for contig 26.

SEQ ID NO: 513 is the determined cDNA sequence for contig 27.

SEQ ID NO: 514 is the determined cDNA sequence for contig 28.

SEQ ID NO: 515 is the determined cDNA sequence for contig 29.

SEQ ID NO: 516 is the determined cDNA sequence for contig 30.

SEQ ID NO: 517 is the determined cDNA sequence for contig 31.

SEQ ID NO: 518 is the determined cDNA sequence for contig 32.

SEQ ID NO: 519 is the determined cDNA sequence for contig 33.

SEQ ID NO: 520 is the determined cDNA sequence for contig 34.

SEQ ID NO: 521 is the determined cDNA sequence for contig 35.

SEQ ID NO: 522 is the determined cDNA sequence for contig 36.

SEQ ID NO: 523 is the determined cDNA sequence for contig 37.

SEQ ID NO: 524 is the determined cDNA sequence for contig 38.

SEQ ID NO: 525 is the determined cDNA sequence for contig 39.

SEQ ID NO: 526 is the determined cDNA sequence for contig 40.

SEQ ID NO: 527 is the determined cDNA sequence for contig 41.

SEQ ID NO: 528 is the determined cDNA sequence for contig 42.

SEQ ID NO: 529 is the determined cDNA sequence for contig 43.

SEQ ID NO: 530 is the determined cDNA sequence for contig 44.

SEQ ID NO: 531 is the determined cDNA sequence for contig 45.

SEQ ID NO: 532 is the determined cDNA sequence for contig 46.

SEQ ID NO: 533 is the determined cDNA sequence for contig 47.

SEQ ID NO: 534 is the determined cDNA sequence for contig 48.

SEQ ID NO: 535 is the determined cDNA sequence for contig 49.

SEQ ID NO: 536 is the determined cDNA sequence for contig 50.

SEQ ID NO: 537 is the determined cDNA sequence for contig 51.

SEQ ID NO: 538 is the determined cDNA sequence for contig 52.

SEQ ID NO: 539 is the determined cDNA sequence for contig 53.

SEQ ID NO: 540 is the determined cDNA sequence for contig 54.

SEQ ID NO: 541 is the determined cDNA sequence for contig 55.

SEQ ID NO: 542 is the determined cDNA sequence for contig 56.

SEQ ID NO: 543 is the determined cDNA sequence for contig 58.

SEQ ID NO: 544 is the determined cDNA sequence for contig 59.

SEQ ID NO: 545 is the determined cDNA sequence for contig 60.

SEQ ID NO: 546 is the determined cDNA sequence for contig 61.

SEQ ID NO: 547 is the determined cDNA sequence for contig 62.

SEQ ID NO: 548 is the determined cDNA sequence for contig 63.

SEQ ID NO: 549 is the determined cDNA sequence for contig 64.

SEQ ID NO: 550 is the determined cDNA sequence for contig 65.

SEQ ID NO: 551 is the determined cDNA sequence for contig 66.

SEQ ID NO: 552 is the determined cDNA sequence for contig 67.

SEQ ID NO: 553 is the determined cDNA sequence for contig 68.
SEQ ID NO: 554 is the determined cDNA sequence for contig 69.
SEQ ID NO: 555 is the determined cDNA sequence for contig 70.
SEQ ID NO: 556 is the determined cDNA sequence for contig 71.
SEQ ID NO: 557 is the determined cDNA sequence for contig 72.
SEQ ID NO: 558 is the determined cDNA sequence for contig 73.
SEQ ID NO: 559 is the determined cDNA sequence for contig 74.
SEQ ID NO: 560 is the determined cDNA sequence for contig 75.
SEQ ID NO: 561 is the determined cDNA sequence for contig 76.
SEQ ID NO: 562 is the determined cDNA sequence for contig 77.
SEQ ID NO: 563 is the determined cDNA sequence for contig 78.
SEQ ID NO: 564 is the determined cDNA sequence for contig 79.
SEQ ID NO: 565 is the determined cDNA sequence for contig 80.
SEQ ID NO: 566 is the determined cDNA sequence for contig 81.
SEQ ID NO: 567 is the determined cDNA sequence for contig 82.
SEQ ID NO: 568 is the determined cDNA sequence for contig 83.
SEQ ID NO: 569 is the determined cDNA sequence for clone CS1-101.
SEQ ID NO: 570 is the determined cDNA sequence for clone CS1-102.
SEQ ID NO: 571 is the determined cDNA sequence for clone CS1-104.
SEQ ID NO: 572 is the determined cDNA sequence for clone CS1-105.
SEQ ID NO: 573 is the determined 3' cDNA sequence for clone CS1-106.
SEQ ID NO: 574 is the determined 5' cDNA sequence for clone CS1-106.
SEQ ID NO: 575 is the determined cDNA sequence for clone CS1-114.
SEQ ID NO: 576 is the determined cDNA sequence for clone CS1-118.
SEQ ID NO: 577 is the determined cDNA sequence for clone CS1-120.
SEQ ID NO: 578 is the determined cDNA sequence for clone CS1-123.
SEQ ID NO: 579 is the determined 3' cDNA sequence for clone CS1-124.
SEQ ID NO: 580 is the determined 5' cDNA sequence for clone CS1-124.
SEQ ID NO: 581 is the determined cDNA sequence for clone CS1-128.
SEQ ID NO: 582 is the determined cDNA sequence for clone CS1-132.
SEQ ID NO: 583 is the determined cDNA sequence for clone CS1-136.

SEQ ID NO: 584 is the determined cDNA sequence for clone CS1-137.
SEQ ID NO: 585 is the determined cDNA sequence for clone CS1-139.
SEQ ID NO: 586 is the determined cDNA sequence for clone CS1-141.
SEQ ID NO: 587 is the determined cDNA sequence for clone CS1-152.
SEQ ID NO: 588 is the determined cDNA sequence for clone CS1-154.
SEQ ID NO: 589 is the determined cDNA sequence for clone CS1-156.
SEQ ID NO: 590 is the determined cDNA sequence for clone CS1-158.
SEQ ID NO: 591 is the determined cDNA sequence for clone CS1-160.
SEQ ID NO: 592 is the determined cDNA sequence for clone CS1-168.
SEQ ID NO: 593 is the determined cDNA sequence for clone CS1-169.
SEQ ID NO: 594 is the determined cDNA sequence for clone CS1-171.
SEQ ID NO: 595 is the determined cDNA sequence for clone CS1-176.
SEQ ID NO: 596 is the determined cDNA sequence for clone CS1-178.
SEQ ID NO: 597 is the determined cDNA sequence for clone CS1-180.
SEQ ID NO: 598 is the determined cDNA sequence for clone CS1-183.
SEQ ID NO: 599 is the determined cDNA sequence for clone CS1-184.
SEQ ID NO: 600 is the determined cDNA sequence for clone CS1-187.
SEQ ID NO: 601 is the determined cDNA sequence for clone CS1-190.
SEQ ID NO: 602 is the determined cDNA sequence for clone CS1-194.
SEQ ID NO: 603 is the determined cDNA sequence for clone CS1-195.
SEQ ID NO: 604 is the determined cDNA sequence for clone CS1-196.
SEQ ID NO: 605 is the determined cDNA sequence for clone CS1-197.
SEQ ID NO: 606 is the determined cDNA sequence for clone CS1-200.
SEQ ID NO: 607 is the determined cDNA sequence for clone CS1-206.
SEQ ID NO: 608 is the determined cDNA sequence for clone CS1-207.
SEQ ID NO: 609 is the determined cDNA sequence for clone CS1-234.
SEQ ID NO: 610 is the determined cDNA sequence for clone CS1-238.
SEQ ID NO: 611 is the determined cDNA sequence for clone CS1-239.
SEQ ID NO: 612 is the determined cDNA sequence for clone CS1-243.
SEQ ID NO: 613 is the determined cDNA sequence for clone CS1-246.
SEQ ID NO: 614 is the determined cDNA sequence for clone CS1-249.

SEQ ID NO: 615 is the determined cDNA sequence for clone CS1-250.

SEQ ID NO: 616 is the determined cDNA sequence for clone CS1-252.

SEQ ID NO: 617 is the determined cDNA sequence for clone CT502.

SEQ ID NO: 618 is the determined cDNA sequence for clone CT507.

SEQ ID NO: 619 is the determined cDNA sequence for clone CT521.

SEQ ID NO: 620 is the determined cDNA sequence for clone CT544.

SEQ ID NO: 621 is the determined cDNA sequence for clone CT577.

SEQ ID NO: 622 is the determined cDNA sequence for clone CT580.

SEQ ID NO: 623 is the determined cDNA sequence for clone CT594.

SEQ ID NO: 624 is the determined cDNA sequence for clone CT606.

SEQ ID NO: 625 is the determined cDNA sequence for clone CT607.

SEQ ID NO: 626 is the determined cDNA sequence for clone CT599.

SEQ ID NO: 627 is the determined cDNA sequence for clone CT632.

SEQ ID NO: 628 is the determined cDNA sequence for clone 35691.

SEQ ID NO: 629 is the determined cDNA sequence for clone 35707.

SEQ ID NO: 630 is the determined cDNA sequence for clone CSE-2.

SEQ ID NO: 631 is the amino acid sequence for clone CSE-2.

SEQ ID NO: 632 is the determined cDNA sequence for clone CT2-1.

SEQ ID NO: 633 is the determined cDNA sequence for clone CT2-6.

SEQ ID NO: 634 is the determined cDNA sequence for clone CT2-8.

SEQ ID NO: 635 is the determined cDNA sequence for clone CT2-9.

SEQ ID NO: 636 is the determined cDNA sequence for clone CT2-12.

SEQ ID NO: 637 is the determined cDNA sequence for clone CT2-15.

SEQ ID NO: 638 is the determined cDNA sequence for clone CT2-16.

SEQ ID NO: 639 is the determined cDNA sequence for clone CT2-17.

SEQ ID NO: 640 is the determined cDNA sequence for clone CT2-19.

SEQ ID NO: 641 is the determined cDNA sequence for clone CT2-23.

SEQ ID NO: 642 is the determined cDNA sequence for clone CT2-25.

SEQ ID NO: 643 is the determined cDNA sequence for clone CT2-27.

SEQ ID NO: 644 is the determined cDNA sequence for clone CT2-35.

SEQ ID NO: 645 is the determined cDNA sequence for clone CT2-39.

SEQ ID NO: 646 is the determined cDNA sequence for clone CT2-41.
SEQ ID NO: 647 is the determined cDNA sequence for clone CT2-43.
SEQ ID NO: 648 is the determined cDNA sequence for clone CT2-44.
SEQ ID NO: 649 is the determined cDNA sequence for clone CT2-53.
SEQ ID NO: 650 is the determined cDNA sequence for clone CT2-54.
SEQ ID NO: 651 is the determined cDNA sequence for clone CT2-55.
SEQ ID NO: 652 is the determined cDNA sequence for clone CT2-57.
SEQ ID NO: 653 is the determined cDNA sequence for clone CT2-60.
SEQ ID NO: 654 is the determined cDNA sequence for clone CT2-64.
SEQ ID NO: 655 is the determined cDNA sequence for clone CT2-67.
SEQ ID NO: 656 is the determined cDNA sequence for clone CT2-68.
SEQ ID NO: 657 is the determined cDNA sequence for clone CT2-75.
SEQ ID NO: 658 is the determined cDNA sequence for clone CT2-79.
SEQ ID NO: 659 is the determined cDNA sequence for clone CT2-109.
SEQ ID NO: 660 is the determined cDNA sequence for clone CT2-112.
SEQ ID NO: 661 is the determined cDNA sequence for clone CT2-127.
SEQ ID NO: 662 is the determined cDNA sequence for clone CT2-129.
SEQ ID NO: 663 is the determined cDNA sequence for clone CT2-156.
SEQ ID NO: 664 is the determined cDNA sequence for clone CT2-162.
SEQ ID NO: 665 is the determined cDNA sequence for clone CT2-167.
SEQ ID NO: 666 is the determined cDNA sequence for clone CT2-169.
SEQ ID NO: 667 is the determined cDNA sequence for clone CT2-172.
SEQ ID NO: 668 is the determined cDNA sequence for clone CT2-173.
SEQ ID NO: 669 is the determined cDNA sequence for clone CT2-174.
SEQ ID NO: 670 is the determined cDNA sequence for clone CT2-177.
SEQ ID NO: 671 is the determined cDNA sequence for clone CT2-181.
SEQ ID NO: 672 is the determined cDNA sequence for clone CT2-191.
SEQ ID NO: 673 is the determined cDNA sequence for clone CT2-192.
SEQ ID NO: 674 is the determined cDNA sequence for clone CT2-207.
SEQ ID NO: 675 is the determined cDNA sequence for clone CT2-222.
SEQ ID NO: 676 is the determined cDNA sequence for clone CT2-223.

SEQ ID NO: 677 is the determined cDNA sequence for clone CT2-233.

SEQ ID NO: 678 is the determined cDNA sequence for clone CT2-244.

SEQ ID NO: 679 is the determined cDNA sequence for clone CT2-257.

SEQ ID NO: 680 is the determined cDNA sequence for clone CT2-279.

SEQ ID NO: 681 is the determined cDNA sequence for clone CT2-288.

SEQ ID NO: 682 is the determined cDNA sequence for clone CT2-291.

SEQ ID NO:683 is the full-length cDNA sequence for human PAC (SEQ ID NOs: 18 and 19).

SEQ ID NO:684 is the full-length cDNA sequence for murine homologue of human PAC (SEQ ID NO: 683).

SEQ ID NO:685 is the predicted amino acid sequence for the clone of SEQ ID NO:683.

SEQ ID NO:686 is a longer determined cDNA sequence for clone CoSub-19 (SEQ ID NO:138).

SEQ ID NO:687 is the predicted amino acid sequence for the clone of SEQ ID NO:686.

SEQ ID NO:688 is the nucleotide sequence of the M13 forward primer.

SEQ ID NO:689 is the nucleotide sequence of the M13 reverse primer.

SEQ ID NO:690 is a longer determined cDNA sequence for C799P (SEQ ID NO:40), showing homology to homo sapiens NADH/NADPH thyroid oxidase p138-tox mRNA.

SEQ ID NO:691 is a longer determined cDNA sequence for C794P (SEQ ID NO:41).

SEQ ID NO:692 is the predicted amino acid sequence for the clone of SEQ ID NO:690.

SEQ ID NO:693 is the predicted amino acid sequence for the clone of SEQ ID NO:691.

SEQ ID NO: 694 is the determined cDNA sequence for clone R0093:A03.

SEQ ID NO: 695 is the determined cDNA sequence for clone R0093:A10.

SEQ ID NO: 696 is the determined cDNA sequence for clone R0093:A11.

SEQ ID NO: 697 is the determined cDNA sequence for clone R0093:A12.

SEQ ID NO: 698 is the determined cDNA sequence for clone R0093:B03.

SEQ ID NO: 699 is the determined cDNA sequence for clone R0093:B04.

SEQ ID NO: 700 is the determined cDNA sequence for clone R0093:B09.

SEQ ID NO: 701 is the determined cDNA sequence for clone R0093:B10.

SEQ ID NO: 702 is the determined cDNA sequence for clone R0093:B11.

SEQ ID NO: 703 is the determined cDNA sequence for clone R0093:B12.

SEQ ID NO: 704 is the determined cDNA sequence for clone R0093:C01.

SEQ ID NO: 705 is the determined cDNA sequence for clone R0093:C03.

SEQ ID NO: 706 is the determined cDNA sequence for clone R0093:C04.

SEQ ID NO: 707 is the determined cDNA sequence for clone R0093:C06.

SEQ ID NO: 708 is the determined cDNA sequence for clone R0093:C08.

SEQ ID NO: 709 is the determined cDNA sequence for clone R0093:C09.

SEQ ID NO: 710 is the determined cDNA sequence for clone R0093:C10.

SEQ ID NO: 711 is the determined cDNA sequence for clone

R0093:C11.

SEQ ID NO: 712 is the determined cDNA sequence for clone R0093:C12.

SEQ ID NO: 713 is the determined cDNA sequence for clone R0093:D01.

SEQ ID NO: 714 is the determined cDNA sequence for clone R0093:D02.

SEQ ID NO: 715 is the determined cDNA sequence for clone R0093:D03.

SEQ ID NO: 716 is the determined cDNA sequence for clone R0093:D04.

SEQ ID NO: 717 is the determined cDNA sequence for clone R0093:D05.

SEQ ID NO: 718 is the determined cDNA sequence for clone R0093:D06.

SEQ ID NO: 719 is the determined cDNA sequence for clone R0093:D07.

SEQ ID NO: 720 is the determined cDNA sequence for clone R0093:D08.

SEQ ID NO: 721 is the determined cDNA sequence for clone R0093:D10.

SEQ ID NO: 722 is the determined cDNA sequence for clone R0093:D11.

SEQ ID NO: 723 is the determined cDNA sequence for clone R0093:E02.

SEQ ID NO: 724 is the determined cDNA sequence for clone R0093:E03.

SEQ ID NO: 725 is the determined cDNA sequence for clone R0093:E04.

SEQ ID NO: 726 is the determined cDNA sequence for clone R0093:E06.

SEQ ID NO: 727 is the determined cDNA sequence for clone R0093:E07.

SEQ ID NO: 728 is the determined cDNA sequence for clone R0093:E08.

SEQ ID NO: 729 is the determined cDNA sequence for clone R0093:E09.

SEQ ID NO: 730 is the determined cDNA sequence for clone R0093:E10.

SEQ ID NO: 731 is the determined cDNA sequence for clone R0093:E11.

SEQ ID NO: 732 is the determined cDNA sequence for clone R0093:F02.

SEQ ID NO: 733 is the determined cDNA sequence for clone R0093:F03.

SEQ ID NO: 734 is the determined cDNA sequence for clone R0093:F04.

SEQ ID NO: 735 is the determined cDNA sequence for clone R0093:F05.

SEQ ID NO: 736 is the determined cDNA sequence for clone R0093:F06.

SEQ ID NO: 737 is the determined cDNA sequence for clone R0093:F08.

SEQ ID NO: 738 is the determined cDNA sequence for clone R0093:F09.

SEQ ID NO: 739 is the determined cDNA sequence for clone R0093:F10.

SEQ ID NO: 740 is the determined cDNA sequence for clone R0093:F12.

SEQ ID NO: 741 is the determined cDNA sequence for clone R0093:G01.

SEQ ID NO: 742 is the determined cDNA sequence for clone

R0093:G03.

SEQ ID NO: 743 is the determined cDNA sequence for clone R0093:G04.

SEQ ID NO: 744 is the determined cDNA sequence for clone R0093:G06.

SEQ ID NO: 745 is the determined cDNA sequence for clone R0093:G07.

SEQ ID NO: 746 is the determined cDNA sequence for clone R0093:G08.

SEQ ID NO: 747 is the determined cDNA sequence for clone R0093:G09.

SEQ ID NO: 748 is the determined cDNA sequence for clone R0093:G10.

SEQ ID NO: 749 is the determined cDNA sequence for clone R0093:G11.

SEQ ID NO: 750 is the determined cDNA sequence for clone R0093:G12.

SEQ ID NO: 751 is the determined cDNA sequence for clone R0093:H02.

SEQ ID NO: 752 is the determined cDNA sequence for clone R0093:H03.

SEQ ID NO: 753 is the determined cDNA sequence for clone R0093:H04.

SEQ ID NO: 754 is the determined cDNA sequence for clone R0093:H05.

SEQ ID NO: 755 is the determined cDNA sequence for clone R0093:H07.

SEQ ID NO: 756 is the determined cDNA sequence for clone R0093:H08.

SEQ ID NO: 757 is the determined cDNA sequence for clone R0093:H09.

SEQ ID NO: 758 is the determined cDNA sequence for clone R0093:H10.

SEQ ID NO: 759 is the determined cDNA sequence for clone R0093:H11.

SEQ ID NO: 760 is the determined cDNA sequence for clone R0094:A03.

SEQ ID NO: 761 is the determined cDNA sequence for clone R0094:A05.

SEQ ID NO: 762 is the determined cDNA sequence for clone R0094:A06.

SEQ ID NO: 763 is the determined cDNA sequence for clone R0094:A07.

SEQ ID NO: 764 is the determined cDNA sequence for clone R0094:A09.

SEQ ID NO: 765 is the determined cDNA sequence for clone R0094:A10.

SEQ ID NO: 766 is the determined cDNA sequence for clone R0094:A12.

SEQ ID NO: 767 is the determined cDNA sequence for clone R0094:B03.

SEQ ID NO: 768 is the determined cDNA sequence for clone R0094:B06.

SEQ ID NO: 769 is the determined cDNA sequence for clone R0094:B08.

SEQ ID NO: 770 is the determined cDNA sequence for clone R0094:B11.

SEQ ID NO: 771 is the determined cDNA sequence for clone R0094:B12.

SEQ ID NO: 772 is the determined cDNA sequence for clone R0094:C01.

SEQ ID NO: 773 is the determined cDNA sequence for clone

R0094:C02.

SEQ ID NO: 774 is the determined cDNA sequence for clone R0094:C03.

SEQ ID NO: 775 is the determined cDNA sequence for clone R0094:C05.

SEQ ID NO: 776 is the determined cDNA sequence for clone R0094:C06.

SEQ ID NO: 777 is the determined cDNA sequence for clone R0094:C08.

SEQ ID NO: 778 is the determined cDNA sequence for clone R0094:C09.

SEQ ID NO: 779 is the determined cDNA sequence for clone R0094:C10.

SEQ ID NO: 780 is the determined cDNA sequence for clone R0094:C11.

SEQ ID NO: 781 is the determined cDNA sequence for clone R0094:C12.

SEQ ID NO: 782 is the determined cDNA sequence for clone R0094:D01.

SEQ ID NO: 783 is the determined cDNA sequence for clone R0094:D02.

SEQ ID NO: 784 is the determined cDNA sequence for clone R0094:D03.

SEQ ID NO: 785 is the determined cDNA sequence for clone R0094:D04.

SEQ ID NO: 786 is the determined cDNA sequence for clone R0094:D05.

SEQ ID NO: 787 is the determined cDNA sequence for clone R0094:D07.

SEQ ID NO: 788 is the determined cDNA sequence for clone R0094:D08.

SEQ ID NO: 789 is the determined cDNA sequence for clone R0094:D09.

SEQ ID NO: 790 is the determined cDNA sequence for clone R0094:D10.

SEQ ID NO: 791 is the determined cDNA sequence for clone R0094:D12.

SEQ ID NO: 792 is the determined cDNA sequence for clone R0094:E01.

SEQ ID NO: 793 is the determined cDNA sequence for clone R0094:E02.

SEQ ID NO: 794 is the determined cDNA sequence for clone R0094:E03.

SEQ ID NO: 795 is the determined cDNA sequence for clone R0094:E05.

SEQ ID NO: 796 is the determined cDNA sequence for clone R0094:E06.

SEQ ID NO: 797 is the determined cDNA sequence for clone R0094:E07.

SEQ ID NO: 798 is the determined cDNA sequence for clone R0094:E08.

SEQ ID NO: 799 is the determined cDNA sequence for clone R0094:E09.

SEQ ID NO: 800 is the determined cDNA sequence for clone R0094:E10.

SEQ ID NO: 801 is the determined cDNA sequence for clone R0094:E11.

SEQ ID NO: 802 is the determined cDNA sequence for clone R0094:E12.

SEQ ID NO: 803 is the determined cDNA sequence for clone R0094:F01.

SEQ ID NO: 804 is the determined cDNA sequence for clone

R0094:F03.

SEQ ID NO: 805 is the determined cDNA sequence for clone R0094:F05.

SEQ ID NO: 806 is the determined cDNA sequence for clone R0094:F06.

SEQ ID NO: 807 is the determined cDNA sequence for clone R0094:F07.

SEQ ID NO: 808 is the determined cDNA sequence for clone R0094:F08.

SEQ ID NO: 809 is the determined cDNA sequence for clone R0094:F09.

SEQ ID NO: 810 is the determined cDNA sequence for clone R0094:F10.

SEQ ID NO: 811 is the determined cDNA sequence for clone R0094:F11.

SEQ ID NO: 812 is the determined cDNA sequence for clone R0094:F12.

SEQ ID NO: 813 is the determined cDNA sequence for clone R0094:G02.

SEQ ID NO: 814 is the determined cDNA sequence for clone R0094:G03.

SEQ ID NO: 815 is the determined cDNA sequence for clone R0094:G04.

SEQ ID NO: 816 is the determined cDNA sequence for clone R0094:G06.

SEQ ID NO: 817 is the determined cDNA sequence for clone R0094:G07.

SEQ ID NO: 818 is the determined cDNA sequence for clone R0094:G08.

SEQ ID NO: 819 is the determined cDNA sequence for clone R0094:G10.

SEQ ID NO: 820 is the determined cDNA sequence for clone R0094:G11.

SEQ ID NO: 821 is the determined cDNA sequence for clone R0094:G12.

SEQ ID NO: 822 is the determined cDNA sequence for clone R0094:H01.

SEQ ID NO: 823 is the determined cDNA sequence for clone R0094:H03.

SEQ ID NO: 824 is the determined cDNA sequence for clone R0094:H04.

SEQ ID NO: 825 is the determined cDNA sequence for clone R0094:H05.

SEQ ID NO: 826 is the determined cDNA sequence for clone R0094:H06.

SEQ ID NO: 827 is the determined cDNA sequence for clone R0094:H08.

SEQ ID NO: 828 is the determined cDNA sequence for clone R0094:H09.

SEQ ID NO: 829 is the determined cDNA sequence for clone R0094:H10.

SEQ ID NO: 830 is the determined cDNA sequence for clone R0094:H11.

SEQ ID NO: 831 is the determined cDNA sequence for clone R0095:A03.

SEQ ID NO: 832 is the determined cDNA sequence for clone R0095:A06.

SEQ ID NO: 833 is the determined cDNA sequence for clone R0095:A07.

SEQ ID NO: 834 is the determined cDNA sequence for clone R0095:B01.

SEQ ID NO: 835 is the determined cDNA sequence for clone

R0095:B02.

SEQ ID NO: 836 is the determined cDNA sequence for clone R0095:B03.

SEQ ID NO: 837 is the determined cDNA sequence for clone R0095:B04.

SEQ ID NO: 838 is the determined cDNA sequence for clone R0095:B05.

SEQ ID NO: 839 is the determined cDNA sequence for clone R0095:B06.

SEQ ID NO: 840 is the determined cDNA sequence for clone R0095:B10.

SEQ ID NO: 841 is the determined cDNA sequence for clone R0095:B11.

SEQ ID NO: 842 is the determined cDNA sequence for clone R0095:B12.

SEQ ID NO: 843 is the determined cDNA sequence for clone R0095:C01.

SEQ ID NO: 844 is the determined cDNA sequence for clone R0095:C03.

SEQ ID NO: 845 is the determined cDNA sequence for clone R0095:C04.

SEQ ID NO: 846 is the determined cDNA sequence for clone R0095:C05.

SEQ ID NO: 847 is the determined cDNA sequence for clone R0095:C06.

SEQ ID NO: 848 is the determined cDNA sequence for clone R0095:C07.

SEQ ID NO: 849 is the determined cDNA sequence for clone R0095:C08.

SEQ ID NO: 850 is the determined cDNA sequence for clone R0095:C10.

SEQ ID NO: 851 is the determined cDNA sequence for clone R0095:C12.

SEQ ID NO: 852 is the determined cDNA sequence for clone R0095:D01.

SEQ ID NO: 853 is the determined cDNA sequence for clone R0095:D03.

SEQ ID NO: 854 is the determined cDNA sequence for clone R0095:D04.

SEQ ID NO: 855 is the determined cDNA sequence for clone R0095:D06.

SEQ ID NO: 856 is the determined cDNA sequence for clone R0095:D07.

SEQ ID NO: 857 is the determined cDNA sequence for clone R0095:D08.

SEQ ID NO: 858 is the determined cDNA sequence for clone R0095:D09.

SEQ ID NO: 859 is the determined cDNA sequence for clone R0095:D11.

SEQ ID NO: 860 is the determined cDNA sequence for clone R0095:D12.

SEQ ID NO: 861 is the determined cDNA sequence for clone R0095:E01.

SEQ ID NO: 862 is the determined cDNA sequence for clone R0095:E02.

SEQ ID NO: 863 is the determined cDNA sequence for clone R0095:E04.

SEQ ID NO: 864 is the determined cDNA sequence for clone R0095:E05.

SEQ ID NO: 865 is the determined cDNA sequence for clone R0095:E06.

SEQ ID NO: 866 is the determined cDNA sequence for clone

R0095:E07.

SEQ ID NO: 867 is the determined cDNA sequence for clone R0095:E08.

SEQ ID NO: 868 is the determined cDNA sequence for clone R0095:E11.

SEQ ID NO: 869 is the determined cDNA sequence for clone R0095:E12.

SEQ ID NO: 870 is the determined cDNA sequence for clone R0095:F01.

SEQ ID NO: 871 is the determined cDNA sequence for clone R0095:F03.

SEQ ID NO: 872 is the determined cDNA sequence for clone R0095:F06.

SEQ ID NO: 873 is the determined cDNA sequence for clone R0095:F10.

SEQ ID NO: 874 is the determined cDNA sequence for clone R0095:F11.

SEQ ID NO: 875 is the determined cDNA sequence for clone R0095:G02.

SEQ ID NO: 876 is the determined cDNA sequence for clone R0095:G03.

SEQ ID NO: 877 is the determined cDNA sequence for clone R0095:G04.

SEQ ID NO: 878 is the determined cDNA sequence for clone R0095:G08.

SEQ ID NO: 879 is the determined cDNA sequence for clone R0095:G09.

SEQ ID NO: 880 is the determined cDNA sequence for clone R0095:G10.

SEQ ID NO: 881 is the determined cDNA sequence for clone R0095:H01.

SEQ ID NO: 882 is the determined cDNA sequence for clone R0095:H02.

SEQ ID NO: 883 is the determined cDNA sequence for clone R0095:H04.

SEQ ID NO: 884 is the determined cDNA sequence for clone R0095:H06.

SEQ ID NO: 885 is the determined cDNA sequence for clone R0095:H07.

SEQ ID NO: 886 is the determined cDNA sequence for clone R0095:H09.

SEQ ID NO: 887 is the determined cDNA sequence for clone R0096:A02.

SEQ ID NO: 888 is the determined cDNA sequence for clone R0096:A08.

SEQ ID NO: 889 is the determined cDNA sequence for clone R0096:A09.

SEQ ID NO: 890 is the determined cDNA sequence for clone R0096:A10.

SEQ ID NO: 891 is the determined cDNA sequence for clone R0096:A11.

SEQ ID NO: 892 is the determined cDNA sequence for clone R0096:A12.

SEQ ID NO: 893 is the determined cDNA sequence for clone R0096:B02.

SEQ ID NO: 894 is the determined cDNA sequence for clone R0096:B03.

SEQ ID NO: 895 is the determined cDNA sequence for clone R0096:B04.

SEQ ID NO: 896 is the determined cDNA sequence for clone R0096:B05.

SEQ ID NO: 897 is the determined cDNA sequence for clone

R0096:B06.

SEQ ID NO: 898 is the determined cDNA sequence for clone R0096:B07.

SEQ ID NO: 899 is the determined cDNA sequence for clone R0096:B08.

SEQ ID NO: 900 is the determined cDNA sequence for clone R0096:B09.

SEQ ID NO: 901 is the determined cDNA sequence for clone R0096:B10.

SEQ ID NO: 902 is the determined cDNA sequence for clone R0096:B11.

SEQ ID NO: 903 is the determined cDNA sequence for clone R0096:B12.

SEQ ID NO: 904 is the determined cDNA sequence for clone R0096:C01.

SEQ ID NO: 905 is the determined cDNA sequence for clone R0096:C03.

SEQ ID NO: 906 is the determined cDNA sequence for clone R0096:C04.

SEQ ID NO: 907 is the determined cDNA sequence for clone R0096:C05.

SEQ ID NO: 908 is the determined cDNA sequence for clone R0096:C06.

SEQ ID NO: 909 is the determined cDNA sequence for clone R0096:C07.

SEQ ID NO: 910 is the determined cDNA sequence for clone R0096:C08.

SEQ ID NO: 911 is the determined cDNA sequence for clone R0096:C09.

SEQ ID NO: 912 is the determined cDNA sequence for clone R0096:C10.

SEQ ID NO: 913 is the determined cDNA sequence for clone R0096:C11.

SEQ ID NO: 914 is the determined cDNA sequence for clone R0096:C12.

SEQ ID NO: 915 is the determined cDNA sequence for clone R0096:D01.

SEQ ID NO: 916 is the determined cDNA sequence for clone R0096:D02.

SEQ ID NO: 917 is the determined cDNA sequence for clone R0096:D03.

SEQ ID NO: 918 is the determined cDNA sequence for clone R0096:D04.

SEQ ID NO: 919 is the determined cDNA sequence for clone R0096:D05.

SEQ ID NO: 920 is the determined cDNA sequence for clone R0096:D08.

SEQ ID NO: 921 is the determined cDNA sequence for clone R0096:D09.

SEQ ID NO: 922 is the determined cDNA sequence for clone R0096:D10.

SEQ ID NO: 923 is the determined cDNA sequence for clone R0096:D12.

SEQ ID NO: 924 is the determined cDNA sequence for clone R0096:E01.

SEQ ID NO: 925 is the determined cDNA sequence for clone R0096:E02.

SEQ ID NO: 926 is the determined cDNA sequence for clone R0096:E03.

SEQ ID NO: 927 is the determined cDNA sequence for clone R0096:E04.

SEQ ID NO: 928 is the determined cDNA sequence for clone

R0096:E05.

SEQ ID NO: 929 is the determined cDNA sequence for clone R0096:E06.

SEQ ID NO: 930 is the determined cDNA sequence for clone R0096:E08.

SEQ ID NO: 931 is the determined cDNA sequence for clone R0096:E09.

SEQ ID NO: 932 is the determined cDNA sequence for clone R0096:E10.

SEQ ID NO: 933 is the determined cDNA sequence for clone R0096:E11.

SEQ ID NO: 934 is the determined cDNA sequence for clone R0096:E12.

SEQ ID NO: 935 is the determined cDNA sequence for clone R0096:F01.

SEQ ID NO: 936 is the determined cDNA sequence for clone R0096:F02.

SEQ ID NO: 937 is the determined cDNA sequence for clone R0096:F03.

SEQ ID NO: 938 is the determined cDNA sequence for clone R0096:F04.

SEQ ID NO: 939 is the determined cDNA sequence for clone R0096:F05.

SEQ ID NO: 940 is the determined cDNA sequence for clone R0096:F07.

SEQ ID NO: 941 is the determined cDNA sequence for clone R0096:F10.

SEQ ID NO: 942 is the determined cDNA sequence for clone R0096:F11.

SEQ ID NO: 943 is the determined cDNA sequence for clone R0096:G01.

SEQ ID NO: 944 is the determined cDNA sequence for clone R0096:G03.

SEQ ID NO: 945 is the determined cDNA sequence for clone R0096:G04.

SEQ ID NO: 946 is the determined cDNA sequence for clone R0096:G05.

SEQ ID NO: 947 is the determined cDNA sequence for clone R0096:G06.

SEQ ID NO: 948 is the determined cDNA sequence for clone R0096:G07.

SEQ ID NO: 949 is the determined cDNA sequence for clone R0096:G09.

SEQ ID NO: 950 is the determined cDNA sequence for clone R0096:G10.

SEQ ID NO: 951 is the determined cDNA sequence for clone R0096:G12.

SEQ ID NO: 952 is the determined cDNA sequence for clone R0096:H01.

SEQ ID NO: 953 is the determined cDNA sequence for clone R0096:H02.

SEQ ID NO: 954 is the determined cDNA sequence for clone R0096:H03.

SEQ ID NO: 955 is the determined cDNA sequence for clone R0096:H07.

SEQ ID NO: 956 is the determined cDNA sequence for clone R0096:H08.

SEQ ID NO: 957 is the determined cDNA sequence for clone R0097:A05.

SEQ ID NO: 958 is the determined cDNA sequence for clone R0097:A06.

SEQ ID NO: 959 is the determined cDNA sequence for clone

R0097:A10.

SEQ ID NO: 960 is the determined cDNA sequence for clone R0097:A11.

SEQ ID NO: 961 is the determined cDNA sequence for clone R0097:B01.

SEQ ID NO: 962 is the determined cDNA sequence for clone R0097:B03.

SEQ ID NO: 963 is the determined cDNA sequence for clone R0097:B04.

SEQ ID NO: 964 is the determined cDNA sequence for clone R0097:B05.

SEQ ID NO: 965 is the determined cDNA sequence for clone R0097:B06.

SEQ ID NO: 966 is the determined cDNA sequence for clone R0097:B07.

SEQ ID NO: 967 is the determined cDNA sequence for clone R0097:B11.

SEQ ID NO: 968 is the determined cDNA sequence for clone R0097:C01.

SEQ ID NO: 969 is the determined cDNA sequence for clone R0097:C02.

SEQ ID NO: 970 is the determined cDNA sequence for clone R0097:C03.

SEQ ID NO: 971 is the determined cDNA sequence for clone R0097:C04.

SEQ ID NO: 972 is the determined cDNA sequence for clone R0097:C05.

SEQ ID NO: 973 is the determined cDNA sequence for clone R0097:C07.

SEQ ID NO: 974 is the determined cDNA sequence for clone R0097:C08.

SEQ ID NO: 975 is the determined cDNA sequence for clone R0097:C09.

SEQ ID NO: 976 is the determined cDNA sequence for clone R0097:C10.

SEQ ID NO: 977 is the determined cDNA sequence for clone R0097:D01.

SEQ ID NO: 978 is the determined cDNA sequence for clone R0097:D08.

SEQ ID NO: 979 is the determined cDNA sequence for clone R0097:E02.

SEQ ID NO: 980 is the determined cDNA sequence for clone R0097:E09.

SEQ ID NO: 981 is the determined cDNA sequence for clone R0097:E11.

SEQ ID NO: 982 is the determined cDNA sequence for clone R0097:F01.

SEQ ID NO: 983 is the determined cDNA sequence for clone R0097:F11.

SEQ ID NO: 984 is the determined cDNA sequence for clone R0097:G01.

SEQ ID NO: 985 is the determined cDNA sequence for clone R0097:G11.

SEQ ID NO: 986 is the determined cDNA sequence for clone R0097:G12.

SEQ ID NO: 987 is the determined cDNA sequence for clone R0097:H01.

SEQ ID NO: 988 is the determined cDNA sequence for clone R0097:H02.

SEQ ID NO: 989 is the determined cDNA sequence for clone R0097:H04.

SEQ ID NO: 990 is the determined cDNA sequence for clone

R0097:H06.

SEQ ID NO: 991 is the determined cDNA sequence for clone R0097:H07.

SEQ ID NO: 992 is the determined cDNA sequence for clone R0097:H09.

SEQ ID NO: 993 is the determined cDNA sequence for clone R0097:H11.

SEQ ID NO: 994 is the determined cDNA sequence for clone R0098:A03.

SEQ ID NO: 995 is the determined cDNA sequence for clone R0098:A05.

SEQ ID NO: 996 is the determined cDNA sequence for clone R0098:A06.

SEQ ID NO: 997 is the determined cDNA sequence for clone R0098:A10.

SEQ ID NO: 998 is the determined cDNA sequence for clone R0098:A12.

SEQ ID NO: 999 is the determined cDNA sequence for clone R0098:B01.

SEQ ID NO: 1000 is the determined cDNA sequence for clone R0098:B02.

SEQ ID NO: 1001 is the determined cDNA sequence for clone R0098:B05.

SEQ ID NO: 1002 is the determined cDNA sequence for clone R0098:B06.

SEQ ID NO: 1003 is the determined cDNA sequence for clone R0098:B10.

SEQ ID NO: 1004 is the determined cDNA sequence for clone R0098:C03.

SEQ ID NO: 1005 is the determined cDNA sequence for clone R0098:C04.

SEQ ID NO: 1006 is the determined cDNA sequence for clone R0098:C05.

SEQ ID NO: 1007 is the determined cDNA sequence for clone R0098:C10.

SEQ ID NO: 1008 is the determined cDNA sequence for clone R0098:C11.

SEQ ID NO: 1009 is the determined cDNA sequence for clone R0098:D01.

SEQ ID NO: 1010 is the determined cDNA sequence for clone R0098:D02.

SEQ ID NO: 1011 is the determined cDNA sequence for clone R0098:D07.

SEQ ID NO: 1012 is the determined cDNA sequence for clone R0098:D08.

SEQ ID NO: 1013 is the determined cDNA sequence for clone R0098:D09.

SEQ ID NO: 1014 is the determined cDNA sequence for clone R0098:D10.

SEQ ID NO: 1015 is the determined cDNA sequence for clone R0098:D11.

SEQ ID NO: 1016 is the determined cDNA sequence for clone R0098:D12.

SEQ ID NO: 1017 is the determined cDNA sequence for clone R0098:E01.

SEQ ID NO: 1018 is the determined cDNA sequence for clone R0098:E04.

SEQ ID NO: 1019 is the determined cDNA sequence for clone R0098:E05.

SEQ ID NO: 1020 is the determined cDNA sequence for clone R0098:E06.

SEQ ID NO: 1021 is the determined cDNA sequence for clone

R0098:E07.

SEQ ID NO: 1022 is the determined cDNA sequence for clone R0098:E11.

SEQ ID NO: 1023 is the determined cDNA sequence for clone R0098:F04.

SEQ ID NO: 1024 is the determined cDNA sequence for clone R0098:F05.

SEQ ID NO: 1025 is the determined cDNA sequence for clone R0098:F06.

SEQ ID NO: 1026 is the determined cDNA sequence for clone R0098:F07.

SEQ ID NO: 1027 is the determined cDNA sequence for clone R0098:F08.

SEQ ID NO: 1028 is the determined cDNA sequence for clone R0098:F09.

SEQ ID NO: 1029 is the determined cDNA sequence for clone R0098:F10.

SEQ ID NO: 1030 is the determined cDNA sequence for clone R0098:F11.

SEQ ID NO: 1031 is the determined cDNA sequence for clone R0098:F12.

SEQ ID NO: 1032 is the determined cDNA sequence for clone R0098:G02.

SEQ ID NO: 1033 is the determined cDNA sequence for clone R0098:G03.

SEQ ID NO: 1034 is the determined cDNA sequence for clone R0098:G05.

SEQ ID NO: 1035 is the determined cDNA sequence for clone R0098:G06.

SEQ ID NO: 1036 is the determined cDNA sequence for clone R0098:G07.

SEQ ID NO: 1037 is the determined cDNA sequence for clone R0098:G08.

SEQ ID NO: 1038 is the determined cDNA sequence for clone R0098:G09.

SEQ ID NO: 1039 is the determined cDNA sequence for clone R0098:G10.

SEQ ID NO: 1040 is the determined cDNA sequence for clone R0098:G11.

SEQ ID NO: 1041 is the determined cDNA sequence for clone R0098:G12.

SEQ ID NO: 1042 is the determined cDNA sequence for clone R0098:H02.

SEQ ID NO: 1043 is the determined cDNA sequence for clone R0098:H03.

SEQ ID NO: 1044 is the determined cDNA sequence for clone R0098:H04.

SEQ ID NO: 1045 is the determined cDNA sequence for clone R0098:H05.

SEQ ID NO: 1046 is the determined cDNA sequence for clone R0098:H07.

SEQ ID NO: 1047 is the determined cDNA sequence for clone R0098:H08.

SEQ ID NO: 1048 is the determined cDNA sequence for clone R0098:H11.

SEQ ID NO: 1049 is the determined cDNA sequence for clone C878P which shows sequence similarity to homo sapiens cDNA FLJ10884 fis, clone NT2RP4001950 and homo sapiens cDNA FLJ11111 fis, clone PLACE1005923.

SEQ ID NO: 1050 is the determined cDNA sequence for clone C882P which shows sequence similarity to homo sapiens cDNA FLJ20116 fis, clone COLO 5655 and homo sapiens cDNA FLJ20740 fis, clone HEP07118.

SEQ ID NO: 1051 is the determined cDNA sequence for clone C883P which shows sequence similarity to human homeobox protein Cdx2 mRNA.

SEQ ID NO: 1052 is the determined cDNA sequence for clone C884P which shows sequence similarity to human TM4SF3 (aka, CO-029).

SEQ ID NO: 1053 is the determined cDNA sequence for clone C886P which shows sequence similarity to human secretory protein (P1.B) mRNA and homo sapiens trefoil factor 3 (intestinal) (TFF3) mRNA.

SEQ ID NO: 1054 is the determined cDNA sequence for clone C892P which shows sequence similarity to human galectin-4 mRNA.

SEQ ID NO: 1055 is the determined cDNA sequence for clone C900P which shows sequence similarity to homo sapiens mucin 11 (MUC11) mRNA.

SEQ ID NO: 1056 is the determined cDNA sequence for clone C902P which shows sequence similarity to homo sapiens calcium-dependent chloride channel-1 (hCLCA1) mRNA.

SEQ ID NO: 1057 is the determined cDNA sequence for clone C903P which shows sequence similarity to homo sapiens transmembrane mucin 12 (MUC12) mRNA.

SEQ ID NO: 1058 is the determined cDNA sequence for clone C899P which shows sequence similarity to homo sapiens intestinal mucin (MUC2) mRNA.

SEQ ID NO:1059 is the predicted amino acid sequence for the clone of SEQ ID NO:1049.

SEQ ID NO:1060 is the predicted amino acid sequence for the clone of SEQ ID NO:1050.

SEQ ID NO:1061 is the predicted amino acid sequence for the clone of SEQ ID NO:1051.

SEQ ID NO:1062 is the predicted amino acid sequence for the clone of SEQ ID NO:1052.

SEQ ID NO:1063 is the predicted amino acid sequence for the clone of SEQ ID NO:1053.

SEQ ID NO:1064 is the predicted amino acid sequence for the clone of SEQ ID NO:1054.

SEQ ID NO:1065 is the predicted amino acid sequence for the clone of SEQ ID NO:1055.

SEQ ID NO:1066 is the predicted amino acid sequence for the clone of SEQ ID NO:1056.

SEQ ID NO:1067 is the predicted amino acid sequence for the clone of SEQ ID NO:1057.

SEQ ID NO:1068 is the predicted amino acid sequence for the clone of SEQ ID NO:1058.

SEQ ID NO:1069 is the full length nucleotide sequence for clone CS1-152 (C880P, C887P).

SEQ ID NO:1070 is the predicted amino acid sequence for the clone of SEQ ID NO:1069.

SEQ ID NO:1071 is the cDNA sequence for human colon specific gene (geneseq X03195) identified from a computer search of the public geneseq database and which shows similarity to clone C880P.

SEQ ID NO:1072 is the cDNA sequence for human protein comprising secretory signal nucleotide sequence 3 (geneseq V29035) identified from a computer search of the public geneseq database and which shows similarity to clone C880P.

SEQ ID NO:1073 is the cDNA sequence for open reading frame human protein comprising secretory signal 3 (geneseq V29036) identified from a computer search of the public geneseq database and which shows similarity to clone C880P.

SEQ ID NO:1074 is the cDNA sequence for human colon specific protein cDNA (geneseq T51784) identified from a computer search of the public geneseq database and which shows similarity to clone C880P.

SEQ ID NO:1075 is the cDNA sequence for human Reg 1-gamma protein (geneseq V29156) identified from a computer search of the public geneseq database and which shows similarity to clone C880P.

SEQ ID NO:1076 is the cDNA sequence for human intestinal peptide-associated transporter HPT-1 mRNA, complete cds and homo sapiens mRNA for L1-cadherin (geneseq X18166) identified from a computer search of the public geneseq database and which shows similarity to clone C888P.

SEQ ID NO:1077 is the amino acid sequence of geneseq record W12691 which shows sequence similarity to clone C880P.

SEQ ID NO:1078 is the amino acid sequence of geneseq record W37866 which shows sequence similarity to clone C880P.

SEQ ID NO:1079 is the amino acid sequence of geneseq record W37929 which shows sequence similarity to clone C880P.

SEQ ID NO:1080 is the amino acid sequence of geneseq record W84274 which shows sequence similarity to clone C880P.

SEQ ID NO:1081 is the amino acid sequence of geneseq record W740898 which shows sequence similarity to clone C888P.

SEQ ID NO:1082 is the determined cDNA sequence for clone 27540

SEQ ID NO:1083 is the predicted amino acid sequence of clone 27540 (SEQ ID NO:1082)

DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for the therapy and diagnosis of cancer, such as colon cancer. The compositions described herein may include colon tumor polypeptides, polynucleotides encoding such polypeptides, binding agents such as antibodies, antigen presenting cells (APCs) and/or immune system cells (*e.g.*, T cells). Polypeptides of the present invention generally comprise at least a portion (such as an immunogenic portion) of a colon tumor protein or a variant thereof. A "colon tumor protein" is a protein that is expressed in colon tumor cells at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in a normal tissue, as determined using a representative assay provided herein. Certain colon tumor proteins are tumor proteins that react detectably (within an immunoassay, such as an ELISA or Western blot) with antisera of a patient afflicted with colon cancer. Polynucleotides of the subject invention generally comprise a DNA or RNA sequence that encodes all or a portion of such a polypeptide, or that is complementary to such a sequence. Antibodies are generally immune system proteins, or antigen-binding fragments thereof, that are capable of binding to a polypeptide as described above.

Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B-cells that express a polypeptide as described above. T cells that may be employed within such compositions are generally T cells that are specific for a polypeptide as described above.

The present invention is based on the discovery of human colon tumor proteins. Sequences of polynucleotides encoding specific tumor proteins are provided in SEQ ID NO: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081.

COLON TUMOR PROTEIN POLYNUCLEOTIDES

Any polynucleotide that encodes a colon tumor protein or a portion or other variant thereof as described herein is encompassed by the present invention. Preferred polynucleotides comprise at least 15 consecutive nucleotides, preferably at least 30 consecutive nucleotides and more preferably at least 45 consecutive nucleotides, that encode a portion of a colon tumor protein. More preferably, a polynucleotide encodes an immunogenic portion of a colon tumor protein. Polynucleotides complementary to any such sequences are also encompassed by the present invention. Polynucleotides may be single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic, cDNA or synthetic) or RNA molecules. RNA molecules include HnRNA molecules, which contain introns and correspond to a DNA molecule in a one-to-one manner, and mRNA molecules, which do not contain introns. Additional coding or non-coding sequences may, but need not, be present within a polynucleotide of the present invention, and a polynucleotide may, but need not, be linked to other molecules and/or support materials.

Polynucleotides may comprise a native sequence (*i.e.,* an endogenous sequence that encodes a colon tumor protein or a portion thereof) or may comprise a variant of such a sequence. Polynucleotide variants may contain one or more substitutions, additions, deletions and/or insertions such that the immunogenicity of the encoded polypeptide is not diminished, relative to a native tumor protein. The effect on the immunogenicity of the encoded polypeptide may generally be assessed as described herein. Variants preferably exhibit at least about 70% identity, more preferably at least about 80% identity and most preferably at least about 90% identity

to a polynucleotide sequence that encodes a native colon tumor protein or a portion thereof.

Two polynucleotide or polypeptide sequences are said to be "identical" if the sequence of nucleotides or amino acids in the two sequences is the same when aligned for maximum correspondence as described below. Comparisons between two sequences are typically performed by comparing the sequences over a comparison window to identify and compare local regions of sequence similarity. A "comparison window" as used herein, refers to a segment of at least about 20 contiguous positions, usually 30 to about 75, in which a sequence may be compared to a reference sequence of the same number of contiguous positions after the two sequences are optimally aligned.

Optimal alignment of sequences for comparison may be conducted using the Megalign program in the Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using default parameters. This program embodies several alignment schemes described in the following references: Dayhoff, M.O. (1978) A model of evolutionary change in proteins – Matrices for detecting distant relationships. In Dayhoff, M.O. (ed.) Atlas of Protein Sequence and Structure, National Biomedical Research Foundation, Washington DC Vol. 5, Suppl. 3, pp. 345-358; Hein J. (1990) Unified Approach to Alignment and Phylogenes pp. 626-645 *Methods in Enzymology* vol. 183, Academic Press, Inc., San Diego, CA; Higgins, D.G. and Sharp, P.M. (1989) *CABIOS 5*:151-153; Myers, E.W. and Muller W. (1988) *CABIOS 4*:11-17; Robinson, E.D. (1971) *Comb. Theor 11*:105; Santou, N. Nes, M. (1987) *Mol. Biol. Evol. 4*:406-425; Sneath, P.H.A. and Sokal, R.R. (1973) *Numerical Taxonomy – the Principles and Practice of Numerical Taxonomy*, Freeman Press, San Francisco, CA; Wilbur, W.J. and Lipman, D.J. (1983) *Proc. Natl. Acad., Sci. USA 80*:726-730.

Preferably, the "percentage of sequence identity" is determined by comparing two optimally aligned sequences over a window of comparison of at least 20 positions, wherein the portion of the polynucleotide or polypeptide sequence in the comparison window may comprise additions or deletions (i.e. gaps) of 20 percent or less, usually 5 to 15 percent, or 10 to 12 percent, as compared to the reference

sequence (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleic acid bases or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the reference sequence (i.e. the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

Variants may also, or alternatively, be substantially homologous to a native gene, or a portion or complement thereof. Such polynucleotide variants are capable of hybridizing under moderately stringent conditions to a naturally occurring DNA sequence encoding a native colon tumor protein (or a complementary sequence). Suitable moderately stringent conditions include prewashing in a solution of 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and 0.2X SSC containing 0.1% SDS.

It will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal homology to the nucleotide sequence of any native gene. Nonetheless, polynucleotides that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous genes that are altered as a result of one or more mutations, such as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

Polynucleotides may be prepared using any of a variety of techniques. For example, a polynucleotide may be identified, as described in more detail below, by screening a microarray of cDNAs for tumor-associated expression (*i.e.*, expression that is at least two fold greater in a colon tumor than in normal tissue, as determined

using a representative assay provided herein). Such screens may be performed using a Synteni microarray (Palo Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA 93*:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA 94*:2150-2155, 1997). Alternatively, polypeptides may be amplified from cDNA prepared from cells expressing the proteins described herein, such as colon tumor cells. Such polynucleotides may be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

An amplified portion may be used to isolate a full length gene from a suitable library (*e.g.*, a colon tumor cDNA library) using well known techniques. Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be preferred for identifying 5' and upstream regions of genes. Genomic libraries are preferred for obtaining introns and extending 5' sequences.

For hybridization techniques, a partial sequence may be labeled (*e.g.*, by nick-translation or end-labeling with ^{32}P) using well known techniques. A bacterial or bacteriophage library is then screened by hybridizing filters containing denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (*see* Sambrook et al., *Molecular Cloning: A Laboratory Manual,* Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The complete sequence may then be determined using standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences are then assembled into a single contiguous sequence. A full length cDNA molecule can be generated by ligating suitable fragments, using well known techniques.

Alternatively, there are numerous amplification techniques for obtaining a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30 nucleotides in length, have a GC content of at least 50% and anneal to the target sequence at temperatures of about 68°C to 72°C. The amplified region may be sequenced as described above, and overlapping sequences assembled into a contiguous sequence.

One such amplification technique is inverse PCR (*see* Triglia et al., *Nucl. Acids Res. 16*:8186, 1988), which uses restriction enzymes to generate a fragment in the known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of amplification with the same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Another such technique is known as "rapid amplification of cDNA ends" or RACE. This technique involves the use of an internal primer and an external primer, which hybridizes to a polyA region or vector sequence, to identify sequences that are 5' and 3' of a known sequence. Additional techniques include capture PCR (Lagerstrom et al., *PCR Methods Applic. 1*:111-19, 1991) and walking PCR (Parker et al., *Nucl. Acids Res. 19*:3055-60, 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be performed using well known programs (*e.g.*, NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence.

Certain nucleic acid sequences of cDNA molecules encoding portions of colon tumor proteins are provided in SEQ ID NO: 1-121, 123-197, 205-630, 632-684, 686, 690-691, and 694-1081. These polynucleotides were isolated from colon tumor cDNA libraries using conventional and/or PCR-based subtraction techniques, as described below.

Polynucleotide variants may generally be prepared by any method known in the art, including chemical synthesis by, for example, solid phase phosphoramidite chemical synthesis. Modifications in a polynucleotide sequence may also be introduced using standard mutagenesis techniques, such as oligonucleotide-directed site-specific mutagenesis (*see* Adelman et al., *DNA 2*:183, 1983). Alternatively, RNA molecules may be generated by *in vitro* or *in vivo* transcription of DNA sequences encoding a colon tumor protein, or portion thereof, provided that the DNA is incorporated into a vector with a suitable RNA polymerase promoter (such as T7 or SP6). Certain portions may be used to prepare an encoded polypeptide, as described herein. In addition, or alternatively, a portion may be administered to a patient such that the encoded polypeptide is generated *in vivo* (*e.g.*, by transfecting antigen-presenting cells, such as dendritic cells, with a cDNA construct encoding a colon tumor polypeptide, and administering the transfected cells to the patient).

A portion of a sequence complementary to a coding sequence (*i.e.*, an antisense polynucleotide) may also be used as a probe or to modulate gene expression. cDNA constructs that can be transcribed into antisense RNA may also be introduced into cells of tissues to facilitate the production of antisense RNA. An antisense polynucleotide may be used, as described herein, to inhibit expression of a tumor protein. Antisense technology can be used to control gene expression through triple-helix formation, which compromises the ability of the double helix to open sufficiently for the binding of polymerases, transcription factors or regulatory molecules (*see* Gee et al., *In* Huber and Carr, *Molecular and Immunologic Approaches*, Futura Publishing Co. (Mt. Kisco, NY; 1994)). Alternatively, an antisense molecule may be designed to hybridize with a control region of a gene (*e.g.*, promoter, enhancer or transcription initiation site), and block transcription of the gene; or to block translation by inhibiting binding of a transcript to ribosomes.

A portion of a coding sequence, or of a complementary sequence, may also be designed as a probe or primer to detect gene expression. Probes may be labeled with a variety of reporter groups, such as radionuclides and enzymes, and are preferably at least 10 nucleotides in length, more preferably at least 20 nucleotides in length and still more preferably at least 30 nucleotides in length. Primers, as noted above, are preferably 22-30 nucleotides in length.

Any polynucleotide may be further modified to increase stability *in vivo*. Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3' ends; the use of phosphorothioate or 2' O-methyl rather than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such as inosine, queosine and wybutosine, as well as acetyl- methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

Nucleotide sequences as described herein may be joined to a variety of other nucleotide sequences using established recombinant DNA techniques. For example, a polynucleotide may be cloned into any of a variety of cloning vectors, including plasmids, phagemids, lambda phage derivatives and cosmids. Vectors of particular interest include expression vectors, replication vectors, probe generation vectors and sequencing vectors. In general, a vector will contain an origin of replication functional in at least one organism, convenient restriction endonuclease sites and one or more selectable markers. Other elements will depend upon the desired use, and will be apparent to those of ordinary skill in the art.

Within certain embodiments, polynucleotides may be formulated so as to permit entry into a cell of a mammal, and expression therein. Such formulations are particularly useful for therapeutic purposes, as described below. Those of ordinary skill in the art will appreciate that there are many ways to achieve expression of a polynucleotide in a target cell, and any suitable method may be employed. For example, a polynucleotide may be incorporated into a viral vector such as, but not limited to, adenovirus, adeno-associated virus, retrovirus, or vaccinia or other pox virus (*e.g.*, avian pox virus). Techniques for incorporating DNA into such vectors are well known to those of ordinary skill in the art. A retroviral vector may additionally

transfer or incorporate a gene for a selectable marker (to aid in the identification or selection of transduced cells) and/or a targeting moiety, such as a gene that encodes a ligand for a receptor on a specific target cell, to render the vector target specific. Targeting may also be accomplished using an antibody, by methods known to those of ordinary skill in the art.

Other formulations for therapeutic purposes include colloidal dispersion systems, such as macromolecule complexes, nanocapsules, microspheres, beads, and lipid-based systems including oil-in-water emulsions, micelles, mixed micelles, and liposomes. A preferred colloidal system for use as a delivery vehicle *in vitro* and *in vivo* is a liposome (*i.e.*, an artificial membrane vesicle). The preparation and use of such systems is well known in the art.

COLON TUMOR POLYPEPTIDES

Within the context of the present invention, polypeptides may comprise at least an immunogenic portion of a colon tumor protein or a variant thereof, as described herein. As noted above, a "colon tumor protein" is a protein that is expressed by colon tumor cells. Proteins that are colon tumor proteins also react detectably within an immunoassay (such as an ELISA) with antisera from a patient with colon cancer. Polypeptides as described herein may be of any length. Additional sequences derived from the native protein and/or heterologous sequences may be present, and such sequences may (but need not) possess further immunogenic or antigenic properties.

An "immunogenic portion," as used herein is a portion of a protein that is recognized (*i.e.*, specifically bound) by a B-cell and/or T-cell surface antigen receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid residues of a colon tumor protein or a variant thereof. Certain preferred immunogenic portions include peptides in which an N-terminal leader sequence and/or transmembrane domain have been deleted. Other preferred immunogenic portions may contain a small N- and/or C-terminal deletion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids), relative to the mature protein.

Immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press, 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with antigen-specific antibodies, antisera and/or T-cell lines or clones. As used herein, antisera and antibodies are "antigen-specific" if they specifically bind to an antigen (*i.e.*, they react with the protein in an ELISA or other immunoassay, and do not react detectably with unrelated proteins). Such antisera and antibodies may be prepared as described herein, and using well known techniques. An immunogenic portion of a native colon tumor protein is a portion that reacts with such antisera and/or T-cells at a level that is not substantially less than the reactivity of the full length polypeptide (*e.g.*, in an ELISA and/or T-cell reactivity assay). Such immunogenic portions may react within such assays at a level that is similar to or greater than the reactivity of the full length polypeptide. Such screens may generally be performed using methods well known to those of ordinary skill in the art, such as those described in Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support and contacted with patient sera to allow binding of antibodies within the sera to the immobilized polypeptide. Unbound sera may then be removed and bound antibodies detected using, for example, ^{125}I-labeled Protein A.

As noted above, a composition may comprise a variant of a native colon tumor protein. A polypeptide "variant," as used herein, is a polypeptide that differs from a native colon tumor protein in one or more substitutions, deletions, additions and/or insertions, such that the immunogenicity of the polypeptide is not substantially diminished. In other words, the ability of a variant to react with antigen-specific antisera may be enhanced or unchanged, relative to the native protein, or may be diminished by less than 50%, and preferably less than 20%, relative to the native protein. Such variants may generally be identified by modifying one of the above polypeptide sequences and evaluating the reactivity of the modified polypeptide with antigen-specific antibodies or antisera as described herein. Preferred variants include those in which one or more portions, such as an N-terminal leader sequence or transmembrane domain, have been removed. Other preferred variants include variants

in which a small portion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids) has been removed from the N- and/or C-terminal of the mature protein.

Polypeptide variants preferably exhibit at least about 70%, more preferably at least about 90% and most preferably at least about 95% identity (determined as described above) to the identified polypeptides.

Preferably, a variant contains conservative substitutions. A "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide chemistry would expect the secondary structure and hydropathic nature of the polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative changes include: (1) ala, pro, gly, glu, asp, gln, asn, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or alternatively, contain non-conservative changes. In a preferred embodiment, variant polypeptides differ from a native sequence by substitution, deletion or addition of five amino acids or fewer. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino acids that have minimal influence on the immunogenicity, secondary structure and hydropathic nature of the polypeptide.

As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (*e.g.*, poly-His), or to enhance binding of the polypeptide to a solid support. For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

Polypeptides may be prepared using any of a variety of well known techniques. Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression vectors known to those of ordinary skill in the art. Expression may be achieved in any appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host cells include prokaryotes, yeast and higher eukaryotic cells. Preferably, the host cells employed are *E. coli*, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete recombinant protein or polypeptide into culture media may be first concentrated using a commercially available filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.

Portions and other variants having fewer than about 100 amino acids, and generally fewer than about 50 amino acids, may also be generated by synthetic means, using techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino acids are sequentially added to a growing amino acid chain. *See* Merrifield, *J. Am. Chem. Soc. 85*:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Perkin Elmer/Applied BioSystems Division (Foster City, CA), and may be operated according to the manufacturer's instructions.

Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises at least one polypeptide as described herein and an unrelated sequence, such as a known tumor protein. A fusion partner may, for example, assist in providing T helper epitopes (an immunological fusion partner), preferably T helper epitopes recognized by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain preferred fusion partners are both

immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.

Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide components may be assembled separately, and ligated into an appropriate expression vector. The 3' end of the DNA sequence encoding one polypeptide component is ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

A peptide linker sequence may be employed to separate the first and the second polypeptide components by a distance sufficient to ensure that each polypeptide folds into its secondary and tertiary structures. Such a peptide linker sequence is incorporated into the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following factors: (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a secondary structure that could interact with functional epitopes on the first and second polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as linkers include those disclosed in Maratea et al., *Gene 40*:39-46, 1985; Murphy et al., *Proc. Natl. Acad. Sci. USA 83*:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not required when the first and second polypeptides have non-essential N-terminal amino

acid regions that can be used to separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

Fusion proteins are also provided that comprise a polypeptide of the present invention together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (*see*, for example, Stoute et al. *New Engl. J. Med.*, *336*:86-91, 1997).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium Haemophilus influenza B (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The lipid tail ensures optimal presentation of the antigen to antigen presenting cells. Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemaglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as amidase LYTA (encoded by the LytA gene; *Gene 43*:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible

for the affinity to the choline or to some choline analogues such as DEAE. This property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see Biotechnology 10*:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

In general, polypeptides (including fusion proteins) and polynucleotides as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that is removed from its original environment. For example, a naturally-occurring protein is isolated if it is separated from some or all of the coexisting materials in the natural system. Preferably, such polypeptides are at least about 90% pure, more preferably at least about 95% pure and most preferably at least about 99% pure. A polynucleotide is considered to be isolated if, for example, it is cloned into a vector that is not a part of the natural environment.

BINDING AGENTS

The present invention further provides agents, such as antibodies and antigen-binding fragments thereof, that specifically bind to a colon tumor protein. As used herein, an antibody, or antigen-binding fragment thereof, is said to "specifically bind" to a colon tumor protein if it reacts at a detectable level (within, for example, an ELISA) with a colon tumor protein, and does not react detectably with unrelated proteins under similar conditions. As used herein, "binding" refers to a noncovalent association between two separate molecules such that a complex is formed. The ability to bind may be evaluated by, for example, determining a binding constant for the formation of the complex. The binding constant is the value obtained when the concentration of the complex is divided by the product of the component concentrations. In general, two compounds are said to "bind," in the context of the present invention, when the binding constant for complex formation exceeds about

10^3 L/mol. The binding constant may be determined using methods well known in the art.

Binding agents may be further capable of differentiating between patients with and without a cancer, such as colon cancer, using the representative assays provided herein. In other words, antibodies or other binding agents that bind to a colon tumor protein will generate a signal indicating the presence of a cancer in at least about 20% of patients with the disease, and will generate a negative signal indicating the absence of the disease in at least about 90% of individuals without the cancer. To determine whether a binding agent satisfies this requirement, biological samples (*e.g.*, blood, sera, sputum, urine and/or tumor biopsies) from patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an antibody or an antigen-binding fragment thereof. Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. *See, e.g.*, Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (*e.g.*, mice, rats, rabbits, sheep or goats). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin

or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically. Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity chromatography using the polypeptide coupled to a suitable solid support.

Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol.* *6*:511-519, 1976, and improvements thereto. Briefly, these methods involve the preparation of immortal cell lines capable of producing antibodies having the desired specificity (*i.e.*, reactivity with the polypeptide of interest). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen cells and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection. After a sufficient time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are selected and their culture supernatants tested for binding activity against the polypeptide. Hybridomas having high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the yield, such as injection of the hybridoma cell line into the peritoneal cavity of a suitable vertebrate host, such as a mouse. Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process in, for example, an affinity chromatography step.

Within certain embodiments, the use of antigen-binding fragments of antibodies may be preferred. Such fragments include Fab fragments, which may be

prepared using standard techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, *Antibodies: A Laboratory Manual,* Cold Spring Harbor Laboratory, 1988) and digested by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be separated by affinity chromatography on protein A bead columns.

Monoclonal antibodies of the present invention may be coupled to one or more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include ^{90}Y, ^{123}I, ^{125}I, ^{131}I, ^{186}Re, ^{188}Re, ^{211}At, and ^{212}Bi. Preferred drugs include methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diptheria toxin, cholera toxin, gelonin, Pseudomonas exotoxin, Shigella toxin, and pokeweed antiviral protein.

A therapeutic agent may be coupled (*e.g.*, covalently bonded) to a suitable monoclonal antibody either directly or indirectly (*e.g.*, via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-containing group, such as an anhydride or an acid halide, or with an alkyl group containing a good leaving group (*e.g.*, a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A linker group can also serve to increase the chemical reactivity of a substituent on an agent or an antibody, and thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional or polyfunctional reagents, both homo- and hetero-functional (such as those described in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl

groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, *e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.

Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction of a disulfide bond (*e.g.*, U.S. Patent No. 4,489,710, to Spitler), by irradiation of a photolabile bond (*e.g.*, U.S. Patent No. 4,625,014, to Senter et al.), by hydrolysis of derivatized amino acid side chains (*e.g.*, U.S. Patent No. 4,638,045, to Kohn et al.), by serum complement-mediated hydrolysis (*e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.), and acid-catalyzed hydrolysis (*e.g.*, U.S. Patent No. 4,569,789, to Blattler et al.).

It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or linkers which provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (*e.g.*, U.S. Patent No. 4,507,234, to Kato et al.), peptides and polysaccharides such as aminodextran (*e.g.*, U.S. Patent No. 4,699,784, to Shih et al.). A carrier may also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (*e.g.*, U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating compounds that include those containing

nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For example, U.S. Patent No. 4,673,562, to Davison et al. discloses representative chelating compounds and their synthesis.

A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody used, the antigen density on the tumor, and the rate of clearance of the antibody.

T CELLS

Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for a colon tumor protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be isolated from bone marrow, peripheral blood, or a fraction of bone marrow or peripheral blood of a patient, using a commercially available cell separation system, such as the ISOLEX™ system, available from Nexell Therapeutics Inc., Irvine, CA . Alternatively, T cells may be derived from related or unrelated humans, non-human mammals, cell lines or cultures.

T cells may be stimulated with a colon tumor polypeptide, polynucleotide encoding a colon tumor polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, a colon tumor polypeptide or polynucleotide is present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for a colon tumor polypeptide if the T cells kill target cells coated with the polypeptide or expressing a gene encoding the polypeptide. T cell specificity may be evaluated using any of a variety of standard techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation,

compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen et al., *Cancer Res.* *54*:1065-1070, 1994. Alternatively, detection of the proliferation of T cells may be accomplished by a variety of known techniques. For example, T cell proliferation can be detected by measuring an increased rate of DNA synthesis (*e.g.*, by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated thymidine incorporated into DNA). Contact with a colon tumor polypeptide (100 ng/ml - 100 μ g/ml, preferably 200 ng/ml - 25 μg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells. Contact as described above for 2-3 hours should result in activation of the T cells, as measured using standard cytokine assays in which a two fold increase in the level of cytokine release (*e.g.*, TNF or IFN-γ) is indicative of T cell activation (*see* Coligan et al., Current Protocols in Immunology, vol. 1, Wiley Interscience (Greene 1998)). T cells that have been activated in response to a colon tumor polypeptide, polynucleotide or polypeptide-expressing APC may be $CD4^+$ and/or $CD8^+$. Colon tumor protein-specific T cells may be expanded using standard techniques. Within preferred embodiments, the T cells are derived from either a patient or a related, or unrelated, donor and are administered to the patient following stimulation and expansion.

For therapeutic purposes, $CD4^+$ or $CD8^+$ T cells that proliferate in response to a colon tumor polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be accomplished in a variety of ways. For example, the T cells can be re-exposed to a colon tumor polypeptide, or a short peptide corresponding to an immunogenic portion of such a polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize a colon tumor polypeptide. Alternatively, one or more T cells that proliferate in the presence of a colon tumor protein can be expanded in number by cloning. Methods for cloning cells are well known in the art, and include limiting dilution.

PHARMACEUTICAL COMPOSITIONS AND VACCINES

Within certain aspects, polypeptides, polynucleotides, T cells and/or

binding agents disclosed herein may be incorporated into pharmaceutical compositions or immunogenic compositions (*i.e.*, vaccines). Pharmaceutical compositions comprise one or more such compounds and a physiologically acceptable carrier. Vaccines may comprise one or more such compounds and an immunostimulant. An immunostimulant may be any substance that enhances or potentiates an immune response to an exogenous antigen. Examples of immunostimulants include adjuvants, biodegradable microspheres (*e.g.*, polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.*, Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound, within the composition or vaccine.

A pharmaceutical composition or vaccine may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Numerous gene delivery techniques are well known in the art, such as those described by Rolland, *Crit. Rev. Therap. Drug Carrier Systems 15*:143-198, 1998, and references cited therein. Appropriate nucleic acid expression systems contain the necessary DNA sequences for expression in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface or secretes such an epitope. In a preferred embodiment, the DNA may be introduced using a viral expression system (*e.g.*, vaccinia or other pox virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch et al., *Proc. Natl. Acad. Sci. USA 86*:317-321, 1989; Flexner et al., *Ann. N.Y.*

Acad. Sci. 569:86-103, 1989; Flexner et al., *Vaccine 8*:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651; EP 0,345,242; WO 91/02805; Berkner, *Biotechniques 6*:616-627, 1988; Rosenfeld et al., *Science 252*:431-434, 1991; Kolls et al., *Proc. Natl. Acad. Sci. USA 91*:215-219, 1994; Kass-Eisler et al., *Proc. Natl. Acad. Sci. USA 90*:11498-11502, 1993; Guzman et al., *Circulation 88*:2838-2848, 1993; and Guzman et al., *Cir. Res. 73*:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer et al., *Science 259*:1745-1749, 1993 and reviewed by Cohen, *Science 259*:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells.

While any suitable carrier known to those of ordinary skill in the art may be employed in the pharmaceutical compositions of this invention, the type of carrier will vary depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. For oral administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (*e.g.*, polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres are disclosed, for example, in U.S. Patent Nos. 4,897,268 and 5,075,109.

Such compositions may also comprise buffers (*e.g.*, neutral buffered saline or phosphate buffered saline), carbohydrates (*e.g.*, glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, chelating agents such as EDTA or glutathione, adjuvants (*e.g.*, aluminum hydroxide) and/or preservatives. Alternatively, compositions of the present

invention may be formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of immunostimulants may be employed in the vaccines of this invention. For example, an adjuvant may be included. Most adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune responses, such as lipid A, *Bortadella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI); Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ); AS-2 (SmithKline Beecham, Philadelphia, PA); aluminum salts such as aluminum hydroxide gel (alum) or aluminum phosphate; salts of calcium, iron or zinc; an insoluble suspension of acylated tyrosine; acylated sugars; cationically or anionically derivatized polysaccharides; polyphosphazenes; biodegradable microspheres; monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (*e.g.*, IFN-γ, TNFα, IL-2 and IL-12) tend to favor the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (*e.g.*, IL-4, IL-5, IL-6 and IL-10) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt.

MPL adjuvants are available from Corixa Corp. (Seattle, WA) (*see* US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555 and WO 99/33488. Immunostimulatory DNA sequences are also described, for example, by Sato et al., *Science 273*:352, 1996. Another preferred adjuvant is a saponin, preferably QS21 (Aquila Biopharmaceuticals Inc., Framingham, MA), which may be used alone or in combination with other adjuvants. For example, an enhanced system involves the combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is quenched with cholesterol, as described in WO 96/33739. Other preferred formulations comprises an oil-in-water emulsion and tocopherol. A particularly potent adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210.

Other preferred adjuvants include Montanide ISA 720 (Seppic, France), SAF (Chiron, California, United States), ISCOMS (CSL), MF-59 (Chiron), the SBAS series of adjuvants (*e.g.,* SBAS-2 or SBAS-4, available from SmithKline Beecham, Rixensart, Belgium), Detox (Ribi ImmunoChem Research Inc., Hamilton, MT), RC-529 (Corixa, Seattle, WA) and Aminoalkyl glucosaminide 4-phosphates (AGPs).

Any vaccine provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient. The compositions described herein may be administered as part of a sustained release formulation (*i.e.,* a formulation such as a capsule, sponge or gel (composed of polysaccharides, for example) that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology (*see, e.g.* Coombes et al., *Vaccine 14*:1429-1438, 1996) and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix and/or contained

within a reservoir surrounded by a rate controlling membrane.

Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of active component release. Such carriers include microparticles of poly(lactide-co-glycolide), as well as polyacrylate, latex, starch, cellulose and dextran. Other delayed-release carriers include supramolecular biovectors, which comprise a non-liquid hydrophilic core (*e.g.*, a cross-linked polysaccharide or oligosaccharide) and, optionally, an external layer comprising an amphiphilic compound, such as a phospholipid (*see e.g.*, U.S. Patent No. 5,151,254 and PCT applications WO 94/20078, WO/94/23701 and WO 96/06638).. The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within pharmaceutical compositions and vaccines to facilitate production of an antigen-specific immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the antigen, to improve activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

Certain preferred embodiments of the present invention use dendritic cells or progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent APCs (Banchereau and Steinman, *Nature 392*:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (*see* Timmerman and Levy, *Ann. Rev. Med. 50*:507-529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*, with marked cytoplasmic processes (dendrites) visible *in vitro*), their

ability to take up, process and present antigens with high efficiency, and their ability to activate naïve T cell responses. Dendritic cells may, of course, be engineered to express specific cell-surface receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used within a vaccine (*see* Zitvogel et al., *Nature Med.* *4*:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNFα to cultures of monocytes harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNFα, CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce differentiation, maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized phenotypes. However, this nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fcγ receptor and mannose receptor. The mature phenotype is typically characterized by a lower expression of these markers, but a high expression of cell surface molecules responsible for T cell activation such as class I and class II MHC, adhesion molecules (*e.g.*, CD54 and CD11) and costimulatory molecules (*e.g.*, CD40, CD80, CD86 and 4-1BB).

APCs may generally be transfected with a polynucleotide encoding a colon tumor protein (or portion or other variant thereof) such that the colon tumor polypeptide, or an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex vivo*, and a composition or vaccine comprising

such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi et al., *Immunology and cell Biology 75*:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells with the colon tumor polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant bacterium or viruses (*e.g.*, vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that provides T cell help (*e.g.*, a carrier molecule). Alternatively, a dendritic cell may be pulsed with a non-conjugated immunological partner, separately or in the presence of the polypeptide.

Vaccines and pharmaceutical compositions may be presented in unit-dose or multi-dose containers, such as sealed ampoules or vials. Such containers are preferably hermetically sealed to preserve sterility of the formulation until use. In general, formulations may be stored as suspensions, solutions or emulsions in oily or aqueous vehicles. Alternatively, a vaccine or pharmaceutical composition may be stored in a freeze-dried condition requiring only the addition of a sterile liquid carrier immediately prior to use.

CANCER THERAPY

In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as colon cancer. Within such methods, pharmaceutical compositions and vaccines are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of a cancer or to treat a patient afflicted with a cancer. A cancer may be diagnosed using criteria generally accepted in the art, including the presence of a malignant tumor.

Pharmaceutical compositions and vaccines may be administered either prior to or following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host immune system to react against tumors with the administration of immune response-modifying agents (such as polypeptides and polynucleotides disclosed herein).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not necessarily depend on an intact host immune system. Examples of effector cells include T cells as discussed above, T lymphocytes (such as $CD8^+$ cytotoxic T lymphocytes and $CD4^+$ T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The polypeptides provided herein may also be used to generate antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic,

macrophage, monocyte, fibroblast and/or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example, antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies have shown that cultured effector cells can be induced to grow in vivo and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see*, for example, Cheever et al., *Immunological Reviews 157*:177, 1997).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into antigen presenting cells taken from a patient and clonally propagated *ex vivo* for transplant back into the same patient. Transfected cells may be reintroduced into the patient using any means known in the art, preferably in sterile form by intravenous, intracavitary, intraperitoneal or intratumor administration.

Routes and frequency of administration of the therapeutic compositions disclosed herein, as well as dosage, will vary from individual to individual, and may be readily established using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g.*, intracutaneous, intramuscular, intravenous or subcutaneous), intranasally (*e.g.*, by aspiration) or orally. Preferably, between 1 and 10 doses may be administered over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.,* untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-

vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 25 μg to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such a response can be monitored by establishing an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to a colon tumor protein generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

METHODS FOR DETECTING CANCER

In general, a cancer may be detected in a patient based on the presence of one or more colon tumor proteins and/or polynucleotides encoding such proteins in a biological sample (for example, blood, sera, sputum, urine and/or tumor biopsies) obtained from the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as colon cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of antigen that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA encoding a tumor protein, which is also indicative of the presence or absence of a cancer. In general, a colon tumor sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. *See, e.g.*, Harlow and Lane, *Antibodies: A Laboratory Manual,* Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b)

detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G, protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized binding agent. Suitable polypeptides for use within such assays include full length colon tumor proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the tumor protein may be attached. For example, the solid support may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking agent). Immobilization by adsorption to a well in a microtiter plate or to a membrane is preferred. In such cases, adsorption may be achieved by contacting the binding

agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1 hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of binding agent ranging from about 10 ng to about 10 µg, and preferably about 100 ng to about 1 µg, is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.*, Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20™ (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the

presence of polypeptide within a sample obtained from an individual with colon cancer. Preferably, the contact time is sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve equilibrium may be readily determined by assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide. An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of time. Unbound detection reagent is then removed and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

To determine the presence or absence of a cancer, such as colon cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered

positive for the cancer. In an alternate preferred embodiment, the cut-off value is determined using a Receiver Operator Curve, according to the method of Sackett et al., *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent. Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich

assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1μg, and more preferably from about 50 ng to about 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the tumor proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use colon tumor polypeptides to detect antibodies that bind to such polypeptides in a biological sample. The detection of such colon tumor protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with a colon tumor protein in a biological sample. Within certain methods, a biological sample comprising $CD4^+$ and/or $CD8^+$ T cells isolated from a patient is incubated with a colon tumor polypeptide, a polynucleotide encoding such a polypeptide and/or an APC that expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with one or more representative polypeptides (*e.g.*, 5 - 25 μg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of colon tumor polypeptide to serve as a control. For $CD4^+$ T cells, activation is preferably detected by evaluating proliferation of the T cells. For $CD8^+$ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding a colon tumor protein in a biological sample. For

example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to amplify a portion of a colon tumor cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.*, hybridizes to) a polynucleotide encoding the colon tumor protein. The amplified cDNA is then separated and detected using techniques well known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding a colon tumor protein may be used in a hybridization assay to detect the presence of polynucleotide encoding the tumor protein in a biological sample.

To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%, preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding a colon tumor protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in length. Preferably, oligonucleotide primers and/or probes will hybridize to a polynucleotide encoding a polypeptide disclosed herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers comprise at least 10 contiguous nucleotides, more preferably at least 15 contiguous nucleotides, of a DNA molecule having a sequence recited in SEQ ID NO: 1-121, 123-197, 205-630, 632-684, 686, 690-691, and 694-1081. Techniques for both PCR based assays and hybridization assays are well known in the art (*see*, for example, Mullis et al., *Cold Spring Harbor Symp. Quant. Biol.*, *51*:263, 1987; Erlich ed., *PCR Technology*, Stockton Press, NY, 1989).

One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample, such as biopsy tissue, and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification may be performed on biological samples taken from a test patient and

from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered positive.

In another embodiment, the disclosed compositions may be used as markers for the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) or polynucleotide evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide or polynucleotide detected increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide or polynucleotide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple colon tumor protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of tumor protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for tumor proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds,

reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to a colon tumor protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively, contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding a colon tumor protein in a biological sample. Such kits generally comprise at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding a colon tumor protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay. Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding a colon tumor protein.

The following Examples are offered by way of illustration and not by way of limitation.

EXAMPLES

Example 1

ISOLATION AND CHARACTERIZATION OF COLON TUMOR POLYPEPTIDES BY PCR-BASED SUBTRACTION AND MICROARRAY ANALYSIS

A cDNA library was constructed in the PCR2.1 vector (Invitrogen, Carlsbad, CA) by subtracting a pool of three colon tumors with a pool of normal colon, spleen, brain, liver, kidney, lung, stomach and small intestine using PCR subtraction methodologies (Clontech, Palo Alto, CA). The subtraction was performed using a PCR-based protocol, which was modified to generate larger fragments. Within this protocol, tester and driver double stranded cDNA were separately digested with five restriction enzymes that recognize six-nucleotide restriction sites (MluI, MscI, PvuII, SalI and StuI). This digestion resulted in an average cDNA size of 600 bp, rather than the average size of 300 bp that results from digestion with RsaI according to the Clontech protocol. This modification did not affect the subtraction efficiency. Two tester populations were then created with different adapters, and the driver library remained without adapters.

The tester and driver libraries were then hybridized using excess driver cDNA. In the first hybridization step, driver was separately hybridized with each of the two tester cDNA populations. This resulted in populations of (a) unhybridized tester cDNAs, (b) tester cDNAs hybridized to other tester cDNAs, (c) tester cDNAs hybridized to driver cDNAs, and (d) unhybridized driver cDNAs. The two separate hybridization reactions were then combined, and rehybridized in the presence of additional denatured driver cDNA. Following this second hybridization, in addition to populations (a) through (d), a fifth population (e) was generated in which tester cDNA with one adapter hybridized to tester cDNA with the second adapter. Accordingly, the second hybridization step resulted in enrichment of differentially expressed sequences which could be used as templates for PCR amplification with adaptor-specific primers.

The ends were then filled in, and PCR amplification was performed using adaptor-specific primers. Only population (e), which contained tester cDNA that did not hybridize to driver cDNA, was amplified exponentially. A second PCR amplification step was then performed, to reduce background and further enrich differentially expressed sequences.

This PCR-based subtraction technique normalizes differentially expressed cDNAs so that rare transcripts that are over-expressed in colon tumor tissue may be recoverable. Such transcripts would be difficult to recover by traditional subtraction methods.

To characterize the complexity and redundancy of the subtracted library, 96 clones were randomly picked and 65 were sequenced, as previously described. These sequences were further characterized by comparison with the most recent Genbank database (April, 1998) to determine their degree of novelty. No significant homologies were found to 21 of these clones, hereinafter referred to as 11092, 11093, 11096, 11098, 11103, 11174, 11108, 11112, 11115, 11117, 11118, 11134, 11151, 11154, 11158, 11168, 11172, 11175, 11184, 11185 and 11187. The determined cDNA sequences for these clones are provided in SEQ ID NO: 48, 49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101 and 109-111, respectively.

Two-thousand clones from the above mentioned cDNA subtraction library were randomly picked and submitted to a round of PCR amplification. Briefly, 0.5 μl of glycerol stock solution was added to 99.5 μl of pcr MIX (80 μl H_20, 10 μl 10X PCR Buffer, 6 μl 25 mM $MgCl_2$, 1 μl 10 mM dNTPs, 1 μl 100 mM M13 forward primer (CACGACGTTGTAAAACGACGG), 1 μl 100 mM M13 reverse primer (CACAGGAAACAGCTATGACC)), and 0.5 μl 5 u/ml Taq polymerase (primers provided by (Operon Technologies, Alameda, CA). The PCR amplification was run for thirty cycles under the following conditions: 95°C for 5 min., 92°C for 30 sec., 57°C for 40 sec., 75°C for 2 min. and 75°C for 5 minutes.

mRNA expression levels for representative clones were determined using microarray technology (Synteni, Palo Alto, CA) in colon tumor tissues (n=25), normal colon tissues (n=6), kidney, lung, liver, brain, heart, esophagus, small intestine, stomach, pancreas, adrenal gland, salivary gland, resting PBMC, activated

PBMC, bone marrow, dendritic cells, spinal cord, blood vessels, skeletal muscle, skin, breast and fetal tissues. The number of tissue samples tested in each case was one (n=1), except where specifically noted above; additionally, all the above-mentioned tissues were derived from humans. The PCR amplification products were dotted onto slides in an array format, with each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, and fluorescent-labeled cDNA probes were generated by reverse transcription according to the protocol provided by Synteni. The microarrays were probed with the labeled cDNA probes, the slides scanned, and fluorescence intensity was measured. This intensity correlates with the hybridization intensity.

One hundred and forty nine clones showed two or more fold over-expression in the colon tumor probe group as compared to the normal tissue probe group. These cDNA clones were further characterized by DNA sequencing with a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A and/or Model 377 (Foster City, CA). These sequences were compared to known sequences in the most recent GenBank database. No significant homologies to human gene sequences were found in forty nine of these clones, represented by the following sixteen cDNA consensus sequences: SEQ ID NO: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46 and 47, hereinafter referred to as Contig 2, 8, 13, 14, 20, 23, 29, 31, 35, 32, 36, 38, 41, 42, 50 and 51, respectively). Contig 29 (SEQ ID NO: 30) was found to be a Rat GSK-3-β-interacting protein Axil homolog. Also, Contigs 31 and 35 (SEQ ID NO: 32 and 33, respectively) were found to be a Mus musculus GOB-4 homolog. The determined cDNA sequences of SEQ ID NO: 1, 3-7, 9-14, 17-21, 23, 25-29, 31, 35, 37, 39, 42-45, 50, 51, 53, 55-58, 61-64, 70-78, 80-88, 91, 92, 94-98, 102-108 and 112 were found to show some homology to previously identified genes sequences.

Microarray analysis demonstrated Contig 2 (SEQ ID NO: 2) showed over-expression in 34% of colon tumors tested, as well as increased expression in normal pancreatic tissue, with no over-expression in normal colon tissues. Upon further analysis, Contigs 2, 8 and 23 were found to share homology to the known gene GW112. Contigs 4, 5, 9 and 52 showed homology to carcinoembryonic antigen (SEQ ID NO: 3, 4, 5 and 6, respectively). A representative sampling of these fragments

showed over-expression in 85% of colon tumors, with over-expression in normal bone marrow and 3/6 normal colon tissues. Contig 6 (SEQ ID NO: 7), showing homology to the known gene sequence for villin, and was over-expressed in about half of all colon tumors tested, with a limited degree of low level over-expression in normal colon. Contig 12 (SEQ ID NO: 14), showing homology to Chromosome 17, clone hRPC.1171_I_10, also referred to as C798P, was over-expressed in approximately 70% of colon tumors tested, with low over-expression in 1/6 normal colon samples. Contig 14, also referred to as 14261 (SEQ ID NO: 16), showing no significant homology to any known gene, showed over-expression in 44% of colon tumors tested, with low level expression in half of normal colon tissues, as well as small intestine and pancreatic tissue. Contig 18 (SEQ ID NO: 21), showing homology to the known gene for L1-cadherin, showed over-expression in approximately half of colon tumors and low level over-expression in 3/6 normal colon tissues tested. Contig 22 (SEQ ID NO: 23), showing homology to Bumetanide-sensitive Na-K-Cl cotransporter was over-expressed in 70% of colon tumors and no over-expression in all normal tissues tested. Contig 25 (SEQ ID NO: 25), showing homology to macrophage inflammatory protein-3α, was over-expressed in over 40% of colon tumors and in activated PBMC. Contigs 26 and 48 (SEQ ID NOS: 25 and 26), showing homology to the sequence for laminin, was over-expressed in 48% of colon tumors and with low over-expression in stomach tissue. Contig 28 (SEQ ID NO: 29), showing homology to the known gene sequence for Chromosome 16 BAC clone CIT987SK-A-363E6, was over-expressed in 33% of colon tumors tested with normal stomach and 2/6 normal colon tissues showing low level over-expression. Contigs 29, 31 and 35 (SEQ ID NOS: 30, 32 and 33, respectively), also referred to as C751P, an unknown sequence showing limited and partial homology to Rat GSK-3β-interacting protein Axil homolog.and Mus musculus GOB-4 homolog, was over-expressed in 74% of colon tumors and no over-expression in all normal tissues tested. Contig 34 (SEQ ID NO: 35), showing homology to the known sequence for desmoglein 2, was over-expressed in 56% of colon tumors and showed low level over-expression in 1/6 normal colon tissues. Contig 36 (SEQ ID NO: 36), an unknown sequence also referred to as C793P, showed over-expression in 30% of colon tumor tissues tested. Contig 37 and 14287.2 (SEQ

ID NOS: 37 and 116), an unknown sequence, but with limited (89%) homology to the known sequence for putative transmembrane protein was over-expressed in 70% of colon tumors, as well as in normal lung tissue and 3/6 normal colon tissues tested. Contig 38, also referred to as C796P and 14219 (SEQ ID NO: 38), showing no significant homology to any known gene, was over-expressed in 38% in colon tumors and no elevated over-expression in any normal tissues. Contig 41 (SEQ ID NO: 40), also referred to as C799P and 14308, an unknown sequence showing no significant homology to any known gene, was over-expressed in 22% of colon tumors. Contig 42, (SEQ ID NO: 41), also referred to as C794P and 14309, an unknown sequence with no significant homology to any known gene, was over-expressed in 63% of colon tumors tested, as well as in 3/6 normal colon tissues. Contig 43 (SEQ ID NO: 42), showing homology to the known sequence for Chromosome 1 specific transcript KIAA0487 was over-expressed in 85% of colon tumors tested and in normal lung and 4/6 normal colon tissues. Contig 49 (SEQ ID NO: 45), showing homology to the known sequence for pump-1, was over-expressed in 44% of colon tumors and no over-expression in all normal tissues tested. Contig 50 (SEQ ID NO: 46), also referred to as C792P and 18323, showing no significant homology to any known gene, was over-expressed in 33% of colon tumors with no detectable over-expression in any normal tissues tested. Contig 51 (SEQ ID NO: 47), also referred to as C795P and 14317 was over-expressed in 11% of colon tumors.

Additional microarray analysis yielded seven clones showing two or more fold over-expression in the colon tumor probe group as compared to the normal tissue probe group. Three of these clones demonstrated particularly good colon tumor specificity, and are represented by SEQ ID NO: 115, 116 and 120. Specifically, SEQ ID NO: 115, referred to as C791P or 14235, which shows homology to the known gene sequence for H. sapiens chromosome 21 derived BAC containing ets-2 gene, was over-expressed in 89% of colon tumors tested and in 5/6 normal colon tissues, as well as over-expressed at low levels in normal lung and activated PBMC. Microarray analysis for SEQ ID NO: 116 is discussed above. SEQ ID NO: 120, referred to as 14295, showing homology to the known gene sequence for secreted cement gland protein XAG-2 homolog, was over-expressed in 70% of colon tumors and in 5/6

normal colon tissues, as well as low level over-expression in normal small intestine, stomach and lung. All clones showing over-expression in colon tumor were sequenced and these sequences compared to the most recent Genbank database (February 12, 1999). Of the seven clones, three contained sequences that did not share significant homology to any known gene sequences, represented by SEQ ID NO: 116, 117 and 119. To the best of the inventors' knowledge, none of these sequences have been previously shown to be present in colon. The determined cDNA sequences of the remaining clones (SEQ ID NO: 113-115 and 120) were found to show some homology to previously identified genes.

Further analysis identified a clone which was recovered several times by PCR subtraction and by expression screening using a mouse anti-scid antiserum. The determined full length cDNA sequence for this clone is provided in SEQ ID NO: 121, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 122. This clone is homologous with the known gene Beta IG-H3, as disclosed in U.S. Patent No. 5,444,164. Microarray analysis demonstrated this clone to be over-expressed in 75 to 80% of colon tumors tested (n=27), with no over-expression in normal colon samples (n=6), but with some low level over-expression in other normal tissues tested.

Further analysis of the PCR-subtraction library described above led to the isolation of longer cDNA sequences for the clones of SEQ ID NO: 30, 115, 46, 118, 41, 47, 38, 113, 14 and 40 (known as C751P, C791P, C792P, C793P, C794P, C795P, C796P, C797P, C798P and C799P, respectively). These determined cDNA sequences are provided in SEQ ID NO: 123-132, respectively. Additional sequences for the clones C794P and C799P are shown in SEQ ID NO:683 and 684, respectively, and the predicted amino acid sequences are shown in SEQ ID NO:685 and 686, respectively. Still further sequences for the clones C794P and C799P are shown in SEQ ID NO: 691 and 690, respectively, and to the predicted amino acid sequence as shown in SEQ ID NO: 693 and 692, respectively.

Using PCR subtraction methodology described above with minor modifications, transcripts from a pool of three moderately differentiated colon adenocarcinoma samples were subtracted with a set of transcripts from normal brain,

pancreas, bone marrow, liver, heart, lung, stomach and small intestine. Modifications of the above protocol were included at the cDNA digestion steps and in the tester to drive hybridization ratios. In a first subtraction, the restriction enzymes PvuII, DraI, MscI and StuI were used to digest cDNAs, and the tester to driver ratio was 1:40, as suggested by Clontech. In a second subtraction, DraI, MscI and StuI were used for cDNA digestion and a tester to driver ratio of 1:76 was used. Following the PCR amplification steps, the cDNAs were clones into pCR2.1 plasmid vector. The determined cDNA sequences of 167 isolated clones are provided in SEQ ID NO: 205-371. These sequences were compared to sequences in the public databases as described above. The sequences of SEQ ID NO: 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369 and 371 were found to show some homology to previously identified ESTs. The remaining sequences were found to show some homology to previously identified genes.

Using the PCR subtraction technology described above, a cDNA library from a pool of primary colon tumors was subtracted with a cDNA library prepared from normal tissues, including brain, bone marrow, kidney, heart, lung, liver, pancreas, small intestine, stomach and trachea. The determined cDNA sequences for 90 clones isolated in this subtraction are provided in SEQ ID NO: 372-461. Comparison of these sequences with those in the public databases as described above, revealed no homologies to the sequences of SEQ ID NO: 426, 445 and 453. The sequences of SEQ ID NO: 372-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455 and 457-461 showed some homology to previously identified genes, while the sequences of SEQ ID NO: 379, 405, 407, 408, 418, 424, 430-432, 437, 442, 444, 452 and 456 showed some homology to previously isolated ESTs.

Using the PCR subtraction methodology described above, a cDNA library prepared from a pool of metastatic colon tumors was subtracted with cDNA from a pool of normal tissues, namely brain, heart, lung, lymph nodes, PBMC,

pancreas, small intestine and stomach. The determined cDNA sequences for 82 clones isolated from the subtracted library are provided in SEQ ID NO: 487-568 (referred to as contigs 1-56 and 58-83, respectively). The sequences of SEQ ID NO: 487, 489, 490, 493-496, 499, 501-509, 511-518, 520-526, 529-542, 544, 546, 548-552, 554, 555, 557, 558, 560, 562, 563, 566 and 567 showed some homology to previously identified gene sequences. The sequences of SEQ ID NO: 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 559, 564, 564 and 568 showed some homology to previously isolated ESTs.

Example 2

ISOLATION OF TUMOR POLYPEPTIDES USING SCID MOUSE-PASSAGED TUMOR RNA

Human colon tumor antigens were obtained using SCID mouse passaged colon tumor RNA as follows. Human colon tumor was implanted in SCID mice and harvested, as described in Patent Application Serial No. 08/556,659 filed 11/13/95, U.S. Patent No. 5,986,170. First strand cDNA was synthesized from poly A+ RNA from three SCID mouse-passaged colon tumors using a Lambda ZAP Express cDNA synthesis kit (Stratagene). The reactions were pooled and digested with RNase A, T1 and H to cleave the RNA and then treated with NaOH to degrade the RNA. The resulting cDNA was annealed with biotinylated (Vector Labs, Inc., Burlingame, CA) cDNA from a normal resting PBMC plasmid library (constructed from Superscript plasmid System, Gibco BRL), and subtracted with streptavidin by phenol/chloroform extraction. Second strand cDNA was synthesized from the subtracted first strand cDNA and digested with S1 nuclease (Gibco BRL). The cDNA was blunted with Pfu polymerase and EcoRI adaptors (Stratagene) were ligated to the ends. The cDNA was phosphorylated with T4 polynucleotide kinase, digested with restriction endonuclease XhoI, and size selected with Sephacryl S-400 (Sigma). Fractions were pooled, ligated to Lambda ZAP Express arms (Stratagene) and packaged with Gigapack Gold III extract (Stratagene). Random plaques were picked,

phagemid was excised, transformed into XLOLR cells (Stratagene) and resulting plasmid DNA (Qiagen Inc., Valencia, CA) was sequenced as described above.

The determined cDNA sequences for 17 clones isolated as described above are provided in SEQ ID NO: 133-151, wherein 133 and 134 represent partial sequences of a clone referred to as CoSub-3 and SEQ ID NO: 135 and 136 represent partial sequences of a clone referred to as CoSub-13. These sequences were compared with those in the public databases as described above. The sequences of SEQ ID NO: 139 and 149 showed no significant homologies to any previously identified sequences. The sequences of SEQ ID NO: 138, 140, 141, 142, 143, 148 and 149 showed some homology to previously isolated expressed sequence tags (ESTs). The sequences of SEQ ID NO: 133-137, 144-147, 150 and 151 showed some homology to previously isolated gene sequences.

The determined cDNA sequences for an additional 46 clones isolated as described above, are provided in SEQ ID NO: 569-616, wherein SEQ ID NO: 573 and 574 represent the 3' and 5' determined cDNA sequences, respectively, for clone CS1-106, and SEQ ID NO: 579 and 580 represent the determined 3' and 5' cDNA sequences, respectively, for clone CS1-124. Comparison of the isolated sequences with those in the public databases revealed no significant homologies to the sequences of SEQ ID NO: 580, 585, 610 and 613. The sequences of SEQ ID NO: 569, 574-577, 584, 587, 592, 595, 598, 603 and 608 showed some homology to previously isolated ESTs, while the sequences of SEQ ID NO: 570-573, 578, 581-583, 586, 588-591, 593, 594, 596, 597, 599-602, 604-607, 609, 611, 612 and 514-616 showed some homology to previously isolated gene sequences.

Example 3

USE OF MOUSE ANTISERA TO IDENTIFY DNA SEQUENCES ENCODING COLON TUMOR ANTIGENS

This example illustrates the isolation of cDNA sequences encoding colon tumor antigens by screening of colon tumor cDNA libraries with mouse anti-tumor sera.

A cDNA expression library was prepared from SCID mouse-passaged

human colon tumor poly A+ RNA using a Stratagene (La Jolla, CA) Lambda ZAP Express kit, following the manufacturer's instructions. Sera was obtained from the colon tumor-bearing SCID mouse. This serum was injected into normal mice to produce anti-colon tumor serum. Approximately 600,000 PFUs were screened from the unamplified library using this antiserum. Using a goat anti-mouse IgG-A-M (H+L) alkaline phosphatase second antibody developed with NBT/BCIP (BRL Labs.), positive plaques were identified. Phage was purified and phagemid excised for several clones with inserts in a pBK-CMV vector for expression in prokaryotic or eukaryotic cells.

The determined cDNA sequences for 46 of the isolated clones are provided in SEQ ID NO: 152-197. The predicted amino acid sequences for the cDNA sequences of SEQ ID NO: 187, 188, 189, 190, 194, 195 and 197 are provided in SEQ ID NO: 198-204, respectively. The determined cDNA sequences were compared with those in the public database as described above. The sequences of SEQ ID NO: 156, 168, 184, 189, 192 and 196 showed some homology to previously isolated ESTs. The sequences of SEQ ID NO: 152-155, 157-167, 169-182, 183, 185-188, 190, 194, 195 and 197 showed some homology to previously identified genes.

The determined cDNA sequences for an additional eleven clones isolated as described above, are provided in SEQ ID NO: 617-627. Comparison of these sequences with those in the public database as described above revealed no known homologies to SEQ ID NO: 621 and 623. The sequences of SEQ ID NO: 622 and 626 were found to show some homology to previously isolated ESTs, while the sequences of SEQ ID NO: 617-620, 624, 625 and 627 showed some homology to previously identified genes.

In further studies, a cDNA library was prepared from SCID-mouse grown colon tumors and screened with mouse anti-SCID serum as described above. Briefly first strand cDNA was synthesized from poly A+ RNA from three SCID mouse-grown human colon tumors using a Lambda ZAP Express cDNA synthesis kit (Stratagene). The reactions were pooled and digested with RNase A, T1 and H to cleave the RNA and then treated with NaOH to degrade the RNA. The cDNA was annealed with biotinylated cDNA from a normal resting PBMC plasmid library

(constructed from Superscript plasmid system; Gibco BRL) and subtracted with streptavidin by phenol/chloroform extraction. Second strand cDNA was synthesized from the subtracted first strand cDNA and digested with S1 nuclease. The cDNA was blunted with Pfu polymerase and EcoRI adaptors were ligated to the ends. The cDNA was phosphorylated with T4 polynucleotide kinase, digested with restriction endonuclease XhoI, and size selected with Sephacryl S-400 (Sigma). Fractions were pooled, ligated to Lambda ZAP Express arms (Stratagene) and packaged with Gigapack Gold III extract (Stratagene). The resulting library was screened with a mouse antiserum raised against serum from SCID mice containing human colon tumors, including the three tumors used to prepare the cDNA libraries.

The determined cDNA for one clone isolated using this procedure is provided in SEQ ID NO: 630. This clone was found to show homology to a previously identified gene. The amino acid sequence encoded by the clone of SEQ ID NO: 630 is provided in SEQ ID NO: 631.

In subsequent studies, an additional cDNA library was prepared from a SCID-passaged human colon tumor and screened with a mouse antiserum raised against serum from the SCID mouse containing the colon tumor. The determined cDNA sequences for 51 clones isolated in these studies are provided in SEQ ID NO: 632-682. Comparison of these sequences with those in the public databases revealed no significant homologies to the sequences of SEQ ID NO: 648 and 668. The sequence of SEQ ID NO: 642 showed some homology to previously isolated ESTs. The sequences of SEQ ID NO: 632-641, 643-647, 649-667 and 669-682 were found to show some homology to previously identified genes. SEQ ID NO: 684 and SEQ ID NO: 690 showed homology to human NADH/NADPH thyroid oxidase p138-tox mRNA.

Example 4

ISOLATION AND CHARACTERIZATION OF COLON TUMOR POLYPEPTIDES BY CONVENTIONAL SUBTRACTION

Two cDNA libraries were constructed and used to create a subtracted cDNA library as follows.

Using the GibcoBRL Superscript Plasmid System with minor modifications, two cDNA libraries were created. The first library, referred to as CTCL, was prepared from a pool of mRNA samples from three colon adenocarcinoma tissue samples. Two of the samples were described as Duke's stage C and one as Duke's stage B. All three samples were grade III in histological status. A second library (referred to as DriverLibpcDNA3.1+) was prepared from a pool of normal tissues, namely liver, pancreas, skin, bone marrow, resting PBMC, stomach and brain. Both libraries were prepared using the manufacturer's instructions with the following modifications: an EcoRI-NotI 5' cDNA adapter was used instead of the provided reagent; the vector pCDNA3.1(+) (Invitrogen) was substituted for the pSPORT vector; and the ligated DNA molecules were transformed into ElectroMaxDH10B electrocompetent cells. Clones from the libraries were analyzed by restriction digest and sequencing to determine average insert size, quality of the library and complexity of the library. DNA was prepared from each library and digested.

The driver DNA was biotinylated and hybridized with the colon library tester DNA at a ratio of 10:1. After two rounds of hybridizations, streptavidin incubations and extractions, the remaining colon cDNAs were size-selected by column chromatography and cloned into the pCMV-Script vector from Stratagene. Clones from this subtracted library (referred to as CTCL-S1) were characterized as described above for the unsubtracted libraries.

The determined cDNA sequences for 20 clones isolated from the CTCL-S1 library are provided in SEQ ID NO: 462-479, 628 and 629. Comparison of these sequences with those in the public databases, as described above, revealed no significant homologies to the sequences of SEQ ID NO: 476, 477 and 479. The remaining sequences showed some homology to previously identified genes.

In further studies, a cDNA library was prepared from a pool of mRNA from three metastatic colon adenocarcinomas derived from liver tissue samples. All samples were described as Duke's stage D. Conventional subtraction was performed as described above, using the DriverLibpcDNA3.1+ library described above as the

driver. The resulting subtracted library (referred to as CMCL-S1) was characterized by isolating a set of clones for restriction analysis and sequencing.

The determined cDNA sequences for 7 clones isolated from the CMCL-S1 library are provided in SEQ ID NO: 480-486. Comparison of these sequences with those in the public databases revealed no significant homologies to the sequence of SEQ ID NO: 483. The sequences of SEQ ID NO: 480-482 and 484-486 were found to show some homology to previously identified genes.

Example 5

SYNTHESIS OF POLYPEPTIDES

Polypeptides may be synthesized on a Perkin Elmer/Applied Biosystems Division 430A peptide synthesizer using FMOC chemistry with HPTU (O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate) activation. A Gly-Cys-Gly sequence may be attached to the amino terminus of the peptide to provide a method of conjugation, binding to an immobilized surface, or labeling of the peptide. Cleavage of the peptides from the solid support may be carried out using the following cleavage mixture: trifluoroacetic acid:ethanedithiol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for 2 hours, the peptides may be precipitated in cold methyl-t-butyl-ether. The peptide pellets may then be dissolved in water containing 0.1% trifluoroacetic acid (TFA) and lyophilized prior to purification by C18 reverse phase HPLC. A gradient of 0%-60% acetonitrile (containing 0.1% TFA) in water (containing 0.1% TFA) may be used to elute the peptides. Following lyophilization of the pure fractions, the peptides may be characterized using electrospray or other types of mass spectrometry and by amino acid analysis.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims.

CLAIMS

1. An isolated polypeptide, comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in SEQ ID NOs: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081;

(b) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-

193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

(c) complements of sequences of (a) or (b).

2. An isolated polypeptide according to claim 1, wherein the polypeptide comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081, or a complement of any of the foregoing polynucleotide sequences.

3. An isolated polypeptide comprising a sequence recited in any one of SEQ ID NOs: 122 and 198-204.

4. An isolated polynucleotide encoding at least 15 amino acid residues of a colon tumor protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID Nos: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081, or a complement of any of the foregoing sequences.

5. An isolated polynucleotide encoding a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs:_ 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-

691, and 694-1081, or a complement of any of the foregoing sequences.

6. An isolated polynucleotide, comprising a sequence recited in any one of SEQ ID NOs:_2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081.

7. An isolated polynucleotide, comprising a sequence that hybridizes to a sequence recited in any one of SEQ ID NOs:_2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081 under moderately stringent conditions.

8. An isolated polynucleotide complementary to a polynucleotide according to any one of claims 4-7.

9. An expression vector, comprising a polynucleotide according to any one of claims claim 4-8.

10. A host cell transformed or transfected with an expression vector according to claim 9.

11. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a colon tumor protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:_2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081, or a complement of any of the foregoing polynucleotide sequences.

12. A fusion protein, comprising at least one polypeptide according to claim 1.

13. A fusion protein according to claim 12, wherein the fusion protein comprises an expression enhancer that increases expression of the fusion protein in a host cell transfected with a polynucleotide encoding the fusion protein.

14. A fusion protein according to claim 12, wherein the fusion protein comprises a T helper epitope that is not present within the polypeptide of

claim 1.

15. A fusion protein according to claim 12, wherein the fusion protein comprises an affinity tag.

16. An isolated polynucleotide encoding a fusion protein according to claim 12.

17. A pharmaceutical composition, comprising a physiologically acceptable carrier and at least one component selected from the group consisting of:

(a) a polypeptide according to claim 1;
(b) a polynucleotide according to claim 4;
(c) an antibody according to claim 11;
(d) a fusion protein according to claim 12; and
(e) a polynucleotide according to claim 16.

18. A vaccine comprising an immunostimulant and at least one component selected from the group consisting of:

(a) a polypeptide according to claim 1;
(b) a polynucleotide according to claim 4;
(c) an antibody according to claim 11;
(d) a fusion protein according to claim 12; and
(e) a polynucleotide according to claim 16.

19. A vaccine according to claim 18, wherein the immunostimulant is an adjuvant.

20. A vaccine according to any claim 18, wherein the immunostimulant induces a predominantly Type I response.

21. A method for inhibiting the development of a cancer in a

patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 17.

22. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a vaccine according to claim 18.

23. A pharmaceutical composition comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a pharmaceutically acceptable carrier or excipient.

24. A pharmaceutical composition according to claim 23, wherein the antigen presenting cell is a dendritic cell or a macrophage.

25. A vaccine comprising an antigen-presenting cell that expresses a polypeptide comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081;

(b) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

(c) complements of sequences of (i) or (ii);

in combination with an immunostimulant.

26. A vaccine according to claim 25, wherein the immunostimulant is an adjuvant.

27. A vaccine according to claim 25, wherein the immunostimulant induces a predominantly Type I response.

28. A vaccine according to claim 25, wherein the antigen-presenting cell is a dendritic cell.

29. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antigen-presenting cell that expresses a polypeptide comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081;

(b) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

(c) complements of sequences of (i) or (ii)encoded by a polynucleotide recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081;

and thereby inhibiting the development of a cancer in the patient.

30. A method according to claim 29, wherein the antigen-presenting cell is a dendritic cell.

31. A method according to any one of claims 21, 22 and 29, wherein the cancer is colon cancer.

32. A method for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs: 1-

121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081; and

(ii) complements of the foregoing polynucleotides;

wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the antigen from the sample.

33. A method according to claim 32, wherein the biological sample is blood or a fraction thereof.

34. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated according to the method of claim 32.

35. A method for stimulating and/or expanding T cells specific for a colon tumor protein, comprising contacting T cells with at least one component selected from the group consisting of:

(a) polypeptides comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) sequences recited in SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081;

(ii) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

(iii) complements of sequences of (i) or (ii);

(b) polynucleotides encoding a polypeptide of (a); and

(c) antigen presenting cells that express a polypeptide of (a);

under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

36. An isolated T cell population, comprising T cells prepared

according

to the method of claim 35.

37. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population according to claim 36.

38. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating $CD4^+$ and/or CD8+ T cells isolated from a patient with at least one component selected from the group consisting of:

(i) polypeptides comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(1) sequences recited in SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081

(2) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

(3) complements of sequences of (1) or (2);

(ii) polynucleotides encoding a polypeptide of (i); and

(iii) antigen presenting cells that expresses a polypeptide of (i);

such that T cells proliferate; and

(b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

39. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating $CD4^+$ and/or CD8+ T cells isolated from a patient

with at least one component selected from the group consisting of:

(i) polypeptides comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(1) sequences recited in SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081;

(2) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

(3) complements of sequences of (1) or (2);

(ii) polynucleotides encoding a polypeptide of (i); and

(iii) antigen presenting cells that express a polypeptide of (i);

such that T cells proliferate;

(b) cloning at least one proliferated cell to provide cloned T cells; and

(c) administering to the patient an effective amount of the cloned T cells, and thereby inhibiting the development of a cancer in the patient.

40. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with a binding agent that binds to a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 or a complement of any of the foregoing polynucleotide sequences;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent; and

(c) comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

41. A method according to claim 40, wherein the binding agent is an antibody.

42. A method according to claim 43, wherein the antibody is a monoclonal antibody.

43. A method according to claim 40, wherein the cancer is colon cancer.

44. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 or a complement of any of the foregoing polynucleotide sequences;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polypeptide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

45. A method according to claim 44, wherein the binding agent is an antibody.

46. A method according to claim 45, wherein the antibody is a monoclonal antibody.

47. A method according to claim 44, wherein the cancer is a colon cancer.

48. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 or a complement of any of the foregoing polynucleotide sequences;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(c) comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

49. A method according to claim 48, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

50. A method according to claim 48, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

51. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a

polynucleotide sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 or a complement of any of the foregoing polynucleotide sequences;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

52. A method according to claim 51, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

53. A method according to claim 51, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

54. A diagnostic kit, comprising:

(a) one or more antibodies according to claim 11; and

(b) a detection reagent comprising a reporter group.

55. A kit according to claim 54, wherein the antibodies are immobilized on a solid support.

56. A kit according to claim 54, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.

57. A kit according to claim 54, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent

groups, enzymes, biotin and dye particles.

58. An oligonucleotide comprising 10 to 40 contiguous nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081, or a complement of any of the foregoing polynucleotides.

59. A oligonucleotide according to claim 58, wherein the oligonucleotide comprises 10-40 contiguous nucleotides recited in any one of SEQ ID NOs: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081.

60. A diagnostic kit, comprising:

(a) an oligonucleotide according to claim 59; and

(b) a diagnostic reagent for use in a polymerase chain reaction or hybridization assay.

SEQUENCE LISTING

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Xu, Jiangchun
Lodes, Michael J.
Secrist, Heather
Benson, Darin R.
Meagher, Madeleine Joy
King, Gordon E.

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cctgggatgc tgcggtgcta taaaagaaag tcgctgcatg cttctgttgt ttttcatagg     420
cttgcttctg atcctgctcc tgcaggtggg cgacaggtat cctaggagct gttttcaaat     480
ctaagtctga tcgcattgtg aatgaaactc tctatgaaaa cacaaagctt ttgagcgcca     540
caggggaaag tgaaaaacaa                                                 560
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<210> 13
<211> 150
<212> DNA
<213> Homo sapien

<400> 13
gggcaggctg tctttttaaa atgtctcggc tagctagacc acagatatct tctagacata 60
ttgaacacat ttaagatttg agggatataa gggaaaatga tatgaatgtg tatttttact 120
caaaataaaa gtaactgttt acgttggtga 150

<210> 14
<211> 403
<212> DNA
<213> Homo sapien

<400> 14
ctgctgcctg tggcgtgtgt gggctggatc ccttgaaggc tgagtttttg agggcagaaa 60
gctagctatg ggtagccagg tgttacaaag gtgctgctcc ttctccaacc cctacttggt 120
ttccctcacc ccaagcctca tgttcatacc agccagtggg ttcagcagaa cgcatgacac 180
cttatcacct ccctccttgg gtgagctctg aacaccagct ttggcccctc cacagtaagg 240
ctgctacatc aggggcaacc ctggctctat cattttcctt ttttgccaaa aggaccagta 300
gcataggtga gccctgagca ctaaaaggag gggtccctga agctttccca ctatagtgtg 360
gagttctgtc cctgaggtgg gtacagcagc cttggttcct ctg 403

<210> 15
<211> 688
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(688)
<223> n = A,T,C or G

<400> 15
caaagcacat tttaatcatt tattttaaaa gggggagtaa agcatttaaa ctgccaatcc 60
tatagactag gacttgaaca tcaaaggaaa aatagacaaa gactagatga taaagtcatt 120
caaaagcaca gaagcacatc acatacacca gcaaggtttc caactactgc actgattaac 180
tagatactct caatagcttt tctatagctc gtcctagaaa aaaaaattaa attttcattt 240
tcttacaagt tccaggctta aacaaaggca aaaattacat gcaacaactg atacactcat 300
aagttgcaca tatgctccaa ggtctttatt agataacaat aaatgctagc actttgtcac 360
tgccatcaga ttttccttat agtcttagag tcatgtaaat aaaagttcca taatgaaatt 420
aaagaaaatt aatttttcta atcttagatc agttccatag aaaactatta attttttttaa 480
agtaggcagt agaagggggt tggtgggggg tggaattggt tagtaagtct ggttctaatc 540
ttctgagctg cctttggaag gaagttatga ggtagaagat tctactgact tttagtaagg 600
tggacaatga gagaaaagaa aaagcaggtg cctcatcnnc agatccttnt ggtatttatn 660
tgccangtnc nanntaatnc atanaaag 688

<210> 16
<211> 408
<212> DNA
<213> Homo sapien

<400> 16
caggtcatca agatgactta caggatgtaa tagggagagc tgtcgagatt ggtgttaaaa 60
agtttatgat tacaggtgga aatctacaag acagtaaaga tgcactgcat ttggcacaaa 120
caaatggtat gtttttcagt acagttggat gtcgtcctac aagatgtggt gaatttgaaa 180

agaataaccc tgatctttac ttaaaggagt tgctaaatct tgctgaaaac aataaaggga 240
aagttgtggc aataggagaa tgcggacttg attttgaccc gactgcagtt ttgtcccaaa 300
gatactcaac tcaaatattt tgaaaaacag tttgaactgt cagaacaaac aaaattacca 360
atgtttcttc attgtccgaa actcacatgc tgaatttttg gacataat 408

<210> 17
<211> 407
<212> DNA
<213> Homo sapien

<400> 17
ggtcctgggg aggccctagg ggagcaccgt gatggagagg acagagcagg ggctccagca 60
ccttctttct ggactggcgt tcacctccct gctcagtgct tgggctccac gggcaggggt 120
cagagcactc cctaatttat gtgctatata aatatgtcag atgtacatag agatctattt 180
tttctaaaac attcccctyc ccactcctct cccacagagt gctggactgt tccaggccct 240
ccagtgggct gatgctggga cccttaggat ggggctccca gctcctttct cctgtgaatg 300
gaggcagaag acctccaata aagtgccttc tgggcttttt ctaacctttg tcttagctac 360
ctgtgtactg aaatttgggc ctttggatcg aatatggtca agaggtt 407

<210> 18
<211> 405
<212> DNA
<213> Homo sapien

<400> 18
tgaagagtca acttgggcct ggaggactga taaagtttgt gattttgagg gcctctaaaa 60
gtattaaagc agcggcagcc gctgcacgca gacatgaggg ctaggttaaa acagtaagat 120
caagttgttt ggacagaaag gctacagagt gtggtcctgg ctcttgtgta agaattacga 180
ccacgctaac catgcctagg aaggaaagga gttattgttt tgtagaaagg tgctggggtt 240
tgagagatca gtcggacacg attggcaggg agagcacgtg tgtttttatg agaattatgc 300
ccgagatagg taacagatga ggaagaaatt tgggcttgat tgaagtaatg gggctgtct 360
gtgaagcttt gcagcagtac agcctaggta atttgctgag cctaa 405

<210> 19
<211> 401
<212> DNA
<213> Homo sapien

<400> 19
tcctgacatt cctgccttct tatattaata agacaaataa aacaaaatag tgttgaagtg 60
ttggggcagc gaaaattttt ggggggtggt atggagagat aatgggcgat gtttctcagg 120
gctgcttcaa gcgggattag ggcggcgtg ggagcctaga gtgggagaga ttaagctgaa 180
gggaggtctt gtggtaaggg gtgatatcat ggggatgtta gaagaaacat ttgtcgtata 240
gaatgattgg tgatggcctg gatacggttt tggatgattt gagaagctaa atggaagata 300
caaggtccga ataaaaggag gagaaaaatg ggtattaaat gtctaagaat tgggaggacc 360
taggacatct gattagagag tgcctaagga gattcagcat a 401

<210> 20
<211> 331
<212> DNA
<213> Homo sapien

<400> 20
aggtccagct ctgtctcata cttgactcta aagtcatcag cagcaagacg ggcattgtca 60
atctgcagaa cgatgcgggc attgtccaca gtatttgcga agatctgagc cctcaggtcc 120
tcgatgatct tgaagtaatg gctccagtct ctgacctggg gtcccttctt ctccaagtgc 180
tcccggattt tgctctccag cctccggttc tcggtctcca ggctcctcac tctgtccagg 240
taagaggcca ggcggtcgtt caggctttgc atggtctcct tctcgttctg gatgcctccc 300

attcctgcca gacccccggc tatcccggtg g 331

<210> 21
<211> 346
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(346)
<223> n = A,T,C or G

<400> 21
ggtccaccac ttgtacccga tatggacttc cggcttctct gtccaatgga gccacactaa 60
agatctcacc agtcacgtgg tcaattttaa gccaacctct tgtgtctccc ctcagtgaat 120
agcttatgtc cagaccttct ggatccttgg cagtcacatt gcccacttta gtgcctatag 180
ctacatcctc actgactttc gcttggaata cgtgttggga aaattgaggt gcttcattca 240
catctgtcac aataagncgt gaacttggca aaagaacttg cattgtactt cacaccaaac 300
actagaggct caggattttc tgctttgaac acaatgttgg aaacag 346

<210> 22
<211> 360
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(360)
<223> n = A,T,C or G

<400> 22
gaagactccc tctctcggaa gccggatccc gagccgggca ggatggatca ccaccagccg 60
gggactgggc gctaccaggt gcttcttaat gaagaggata actcagaatc atcggctata 120
gagcagccac ctacttcaaa cccagcaccc gcagattgtg caggctgcgt cttcagcacc 180
agcacttgaa actgactctt cccctccacc atatagtagt attactggtg gaagtaccta 240
caacttcaga tacagaagtt tacggtgagt tttatcccgt gccacctccc tatagcgttg 300
ctacctctct tcctacnwta cgatgaaagc tgagaaggct aaagctgctg caatggcatg 360

<210> 23
<211> 251
<212> DNA
<213> Homo sapien

<400> 23
ggcggagctc cacgacgagc tggaaaagga acctttttgag gatggctttg caaatgggga 60
agaaagtact ccaaccagag atgctgtggt cacgtatact gcagaaagta aaggagtcgt 120
gaagtttggc tggatcaagg gtgtattagt acgttgtatg ttaaacattt ggggtgtgat 180
gcttttcatt agattgtcat ggattgtggg tcaagctgga ataggtctat cagtccttgt 240
aataatgatg g 251

<210> 24
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)

<223> n = A,T,C or G

<400> 24
caggtctttc ccaggtgttg actccagctc cagcttcagc tccagctcca ggtcgggctc 60
cagctccagc cgcagcttar gcagcgggag gttctgtgtc ccagttgttt tccaatttca 120
ccggctcccg tggatgamcg ygggacctgy caswgctcct gtktycctgc yagsacacca 180
cnytttyccg tggacacrar kggaacckct tggaattcac agctyatgtt ctttctcara 240
agtttgagaa agaactttct aaagtgaggg aatatgtcca attaattagt gtgtatgaaa 300
agaaactgtt aaacctaact gtccgaattg acatcatgga raaaggatac catttcttac 360
actgaactgg acttcgagct gatcaaggta gaagtgaagg agatggaaaa actggtcata 420
c 421

<210> 25
<211> 381
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(381)
<223> n = A,T,C or G

<400> 25
gaactttttg tttctttatt ttcaatattt gtcttattaa tatttttctt attttataat 60
gcaattacaa caatttagga nacaaaacaa tataaacaaa agaatgttaa atagtttttt 120
ttaaaaaata gcttgttgct tgcaanaaag tccatataat cttattcccc cccaaatata 180
attttatact ttgcactaaa ccaaaatagc ttatggaaaa ttagtattaa atagctaaac 240
acagaaaacc tacagctata aataacataa aatacagttt aactttaatg ngatgcttaa 300
acaaagcaaa ctatgatgca atatgaatca acttcattaa ttggacaagt ccagnggagg 360
cacaaattag ataagcacta a 381

<210> 26
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 26
ggaaaaggga ctggcctctc tgaagagtga gatgagggaa gtggaaggag agctggaaag 60
gaaggagctg gagtttgaca cgaatatgga tgcagtacag atggtgatta cagaagccca 120
gaaggttgat accagaagcc aagaacgctg gggttacaat ccaagacaca ctcaacacat 180
tagacgggct cctgcattct gatggaccaa ccttttcang tggtaagatt gaagangggg 240
cctgggctta cctgggaagc aaaaactttt cccganccaa ggaacccagg attcaaccan 300
gcnacttgcn ggccaaggaa ggcanaactn ggaanaaaag gccccttaag caaaagggnc 360
accttcattt gctnggaaan cagcctttan ttggaatctt g 401

<210> 27
<211> 383
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(383)

<223> n = A,T,C or G

<400> 27
aattgcaact ggacttttat tgggcagtta cnacaacnaa tgttttcana aaaatatttg 60
gaaaaaatat accacttcat agctaagtct tacagagaan aggatttgct aataaaactt 120
aagttttgaa aattaagatg cnggtanagc ttctgaacta atgcccacag ctccaaggaa 180
nacatgtcct atttagttat tcaaatacca gttgagggca ttgtgattaa gcaaacaata 240
tatttgttan aactttgntt ttaaattact gntncttgac attacttata aaggagnctc 300
taactttcga tttctaaaac tatgtaatac aaaagtatan ntttccccat tttgataaaa 360
gggccnanga tactgantag gaa 383

<210> 28
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 28
ggtcgcgttt cccctggctc acagtctgcc attatttgca tttttaaatg aagaaaagtt 60
taacgtggat ggatggacag tttacaatcc agtggaagaa tacaggaggc agggcttgcc 120
caatcaccat tggagaataa cttttattaa taagtgctat gagctctgcg acacttaccc 180
tgctcttttg gtggttccgt atcgtgcctc anatgatgac ctccggagag ttgcaacttt 240
taggtcccga aatcgaattc cagtgctgtc atggattcat ccagaaaata agacggtcat 300
tgtgcgttgc agtcagcctc ttgtcggtat gagtgggaaa cgaaataaag atgatgagaa 360
atatctcgat gttatcaggg agactaataa acaaatttct a 401

<210> 29
<211> 401
<212> DNA
<213> Homo sapien

<400> 29
atatgagttt gccatctcca tggatgccat ttcaatgcct tcagggtaat cattctctcc 60
ccaaagactg cccacggggt catcactcct gtgacgaaat gagggctgga ttgaagatgt 120
tctgctgagc accccccctgg tcatctttgg ggtctcagaa gagccataat catgaccatt 180
ctcagcatct gaataatcag gttctctcca agtgcttggc aagttctgat tgtcctcagc 240
actgggatag tctggctccc caaaaaaggg tggagagtta ggttgaatgt cagcgcctgg 300
ataatcaggc tttcccagag agtctgcgta tggattgatt ctaaaacttg tatgttccag 360
attctttctg gatcctggat ggttcaaatt ggctctgggt c 401

<210> 30
<211> 401
<212> DNA
<213> Homo sapien

<400> 30
cctgaactat ttattaaaaa catgaccact cttggctatt gaagatgctg cctgtatttg 60
agagactgcc atacataata tatgacttcc tagggatctg aaatccataa actaagagaa 120
actgtgtata gcttacctga acaggaatcc ttactgatat ttatagaaca gttgatttcc 180
cccatcccca gtttatggat atgctgcttt aaacttggaa gggggagaca ggaagtttta 240
attgttctga ctaaacttag gagttgagct aggagtgcgt tcatggtttc ttcactaaca 300
gaggaattat gctttgcact acgtccctcc aagtgaagac agactgtttt agacagactt 360
tttaaaatgg tgccctacca ttgacacatg cagaaattgg t 401

<210> 31
<211> 297
<212> DNA
<213> Homo sapien

<400> 31
acctccatta atgccaggtg ttcctcctct gatgccagga atgccaccag ttatgccagg 60
catgccacct ggattgcatc atcagagaaa atacacccag tcattttgcg gtgaaaacat 120
aatgatgcca atgggtggaa tgatgccacc tggaccagga ataccacctc tgatgcctgg 180
aatgccacca ggtatgcccc cacctgttcc acgtcctgga attcctccaa tgactcaagc 240
acaggctgtt tcagcgccag gtattcttaa tagaccacct gcaccaacag caactgt 297

<210> 32
<211> 401
<212> DNA
<213> Homo sapien

<400> 32
caaacctgga gccaaaaagg acacaaagga ctctcgaccc aaactgcccc agaccctctc 60
cagaggttgg ggtgaccaac tcatctggac tcagacatat gaagaagctc tatataaatc 120
caagacaagc aacaaaccct tgatgattat tcatcacttg ggtgagtgcc cacacagtca 180
agctttaaag aaagtgtttg ctgaaaataa agaaatccag aaattggcag agcagtttgt 240
cctcctcaat ctggtttatg aaacaactga caaacacctt tctcctgatg gccagtatgt 300
ccccaggatt atgtttgttg acccatctct gacagttaga gcccgatatc actggaagat 360
attcaaaccg tctctatgct tacgaacctg cagatacagc t 401

<210> 33
<211> 401
<212> DNA
<213> Homo sapien

<400> 33
agcagaggga caggaatcat tcggccactg ttcagacggg agccacaccc ttctccaatc 60
caagcctggc cccagaagat cacaaagagc caaagaaact ggcaggtgtc cacgcgctcc 120
aggccagtga gttggttgtc acttactttt tctgtgggga agaaattcca taccggagga 180
tgctgaaggc tcagagcttg accctgggcc actttaaaga gcagctcagc aaaaagggaa 240
attataggta ttacttcaaa aaagcaagcg atgagtttgc ctgtggagcg gtgtttgagg 300
agatctggga ggatgagacg gtgctcccga tgtatgaagg ccggattctg ggcaaagtgg 360
agcggatcga ttgagccctg ggtctggct ttggtgaact g 401

<210> 34
<211> 401
<212> DNA
<213> Homo sapien

<400> 34
aacaatggct atgaaggcat tgtcgttgca atcgacccca atgtgccaga agatgaaaca 60
ctcattcaac aaataaagga catggtgacc caggcatctc tgtatctgtt tgaagctaca 120
ggaaagcgat tttatttcaa aaatgttgcc attttgattc ctgaaacatg gaagacaaag 180
gctgactatg tgagaccaaa acttgagacc tacaaaaatg ctgatgttct ggttgcttga 240
gtctactcct ccaggtaatg atgaacccta cactgagcag atggggcaac tgtggagaga 300
aggggtgaaa ggatcccacc tcactcctga tttcattgca ggaaaaaagt tagcttgaat 360
atggaccaca aggtaagggc atttgtccat gaatggggct c 401

<210> 35
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 35
catttcttcc tactagactg ccccttgat ccactggcag aaatgatggc accaccttgt 60
cttcaggtgg tgctccttca ttattccaag gatgcagcat ctctatggtg ccaggtatgg 120
gggtaaagcc tttggcgccc tttccgcaat ggcacatcag cagtaaaagt ggtaccaata 180
gcangaacag aaagggcaaa atcatgancg caattgctgc gggtcccaag cccacatagg 240
aatcatgctg ngcttccctg canccgctgc catgcaagac actnacaaac tgngantgta 300
aggacctgct tttcaggaca actaaaaccc tgattgnctg aaatcaggaa ctgaatttca 360
cttctcccaa gctttttctc actttggtgc aacancacac t 401

<210> 36
<211> 401
<212> DNA
<213> Homo sapien

<400> 36
cctgctagaa tcactgccgc tgtgctttcg tggaaatgac agttccttgt ttttttgtt 60
tctgtttttg ttttacatta gtcattggac cacagccatt caggaactac cccctgcccc 120
acaaagaaat gaacagttgt agggagaccc agcagcacct ttcctccaca caccttcatt 180
ttgaagttcg ggtttttgtg ttaagttaat ctgtacattc tgtttgccat tgttacttgt 240
actatacatc tgtatatagt gtacggcaaa agagtattaa tccactatct ctagtgcttg 300
actttaaatc agtacagtac ctgtacctgc acggtcaccc gctccgtgtg tcgccctata 360
ttgagggctc aagctttccc ttgtttttg aaaggggttt a 401

<210> 37
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 37
cnnctntgna atggantnnt tgnctaaaan ganttgatga tgatgaanat ccctangang 60
antaagcatg gancntgatc ntttnctnng cactccttta cgacacggaa acangnatca 120
ncatgatggt accaganacc ttatcaccna cgcgcacnga nctgactnat tccaaagagt 180
tgnggttacg gncatccggt cattgctcgt gcccattgct gcagggctga tnctactggt 240
gcttattatg ntggccctga ggatgctcca caatgaatat aagcatgctg catgatcagc 300
ggcaacanat gctctgccgt ttgcactaca tctttcacgg acacnatntc gaanacgggc 360
acnttgcana gttagacttg gaatgcatgg ngccggncan n 401

<210> 38
<211> 401
<212> DNA
<213> Homo sapien

<400> 38
aattggctca ctctctcaag gcaagcactg tctcaaggca gtctcaaggc agagatgaca 60
cagcaaaaaa cagaggggga gaaaaaagtc tattattggc ttgtgattta caaaagccaa 120
agtcctttag ataaaaggcc aggagtcgta ccaacataga taccaaatcc aggagaacac 180
agaccagcga taagagggac gcttccccat gacccagacc agcctaaagc ccctgtgggg 240

gcagccagtg gggagctgtc agaccttgga catggtggtc tttgagaatg ggtctgccct 300
tctctccctg accagttggg atagacacct gactggaatc cttgacactg gcaggtgttt 360
ctatgaacag agaggactgt gcctgtcttc ctgaatccca a 401

<210> 39
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 39
tctggtangg agcaattcta ttatttggca ttgcatggct gggttgaatt aaaacaggga 60
gtgagaacag gtgagtctag aagtccaact ctgaaaagga ccactgtaca tttgaacaca 120
cggctgtgtt aaagatgctg ctaatgtcag tcactgggtg cactaaagga tctcttattt 180
tatgtaaaac gttgggaatg acaagatana actgatactc tggtaagtta ccctctgaag 240
ctacttcttg tgaaatacta atgacagcat catcctgcca agcgaaagag gcaggcataa 300
gcaaggacaa attaaaaggg ggtaagagcc ttatcatgat gaggagtctt gttttgacat 360
cttgggaaaa gctgtccata gtgtgaagtc gtcaatttct c 401

<210> 40
<211> 401
<212> DNA
<213> Homo sapien

<400> 40
tctggtcacc caactcttgt ggaagagggg aattgagatc gagtactgaa tatctggcag 60
agaggctgga atccttcagc cccagagccc agggaccact ccagtagatg cagagagggg 120
cctgcccagg ggtcagggca gtgggtatca ctggtgacat caagaatatc agggctgggg 180
aggcatcttt gtttcctggt gccctcctca aagttgctga cactttgggg acgggaaggg 240
gtagaagtag ggctgctcct tttggagctg gagggaatag acctggagac agagttgagg 300
cagtcgggct gtccaggttc taagcatcac agcttctgca ctgggctctg aggagattct 360
cagccagagg atcccagcct cctcctccct caaatgtcaa g 401

<210> 41
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 41
ctggactaaa aatgtccact atggggtgca ctctacagtt tttgaaatgc taggaggcag 60
aaggggcaga gagtaaaaaa catgacctgg tagaaggaag agaggcaaag gaaactaggt 120
ggggaggatc aattagagag gaggcacctg ggatccacct tcttccttan gtcccctcct 180
ccatcagcaa aggagcactt ctctaatcat gccctcccga agactggctg ggagaaggtt 240
taaaaacaaa aaatccagga gtaagagcct taggtcagtt tgaaattgga gacaaactgt 300
ctggcaaagg gtgcganagg gagcttgtgc tcangagtcc agcccgtcca gcctcggggt 360
gtangtttct gaagtgtgcc attggggcct caccttctct g 401

<210> 42
<211> 310

<212> DNA
<213> Homo sapien

<400> 42
ggttcgacaa atccccaaaa atggcaaatt aagccctgtg acaaaataag ttattggatc 60
atacagaaat agcccaaatc tggaaatttt gaattaaaat tgtaatcctg taaaacaagt 120
tttggggtga atggatttct ttaataccaa taatattttt aattcccacc acagatggat 180
ttgctgaata tgctaatgct gtgaatgaga aaacaatttt ggggtaggta tacccacaag 240
taatctgatg acaaaataaa ccacagactg atgtcaaatg gacaaaaaac tgaaaatatg 300
ctgtgagaaa 310

<210> 43
<211> 401
<212> DNA
<213> Homo sapien

<400> 43
aggtcactta cacttgtgac cagtgtgggg cagagaccta ccagccgatc cagtctccca 60
ctttcatgcc tctgatcatg tgcccaagcc aggagtgcca aaccaaccgc tcaggagggc 120
ggctgtatct gcagacacgg ggctccagat tcatcaaatt ccaggagatg aagatgcaag 180
aacatagtga tcaggtgcct gtgggaaata tccctcgtag tatcacggtg ctggtagaag 240
gagagaacac aaggattgcc cagcctggag accacgtcag cgtcactggt attttcttgc 300
caatcctgcg cactgggttc cgacaggtgg tacagggttt actctcagaa acctacctgg 360
aagcccatcg gattgtgaag atgaacaaga gtgaggatga t 401

<210> 44
<211> 401
<212> DNA
<213> Homo sapien

<400> 44
atccctgtaa gtctattaaa tgtaaataat acatacttta caacttctct tagtcggccc 60
ttggcagatt aaatctttgc aaaattccat atgtgctatt gaaaaatgaa ataaaacctc 120
agatgtctga attcttattt caaatacagt tatataatta ttttaaatta caatatacaa 180
tttctgttaa atacaactgt taagggattc tgagaacaat tataagatta taataaatata 240
tacaaactaa cttctgaaat gacatgggtt gtttccttcc caccctccta ccctctcaaa 300
gagtttttgc atttgctgtt cctggttgca aaaggcaaaa gaaaatctaa aaatagtctg 360
tgtgtgtcca cgacatgctc gctcctttga gaatctcaaa c 401

<210> 45
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 45
gtgcctgctg cctggcagcc tggccctgcc gctgcctcag gaggcgggag gcatgagtga 60
gctacagtgg gaacaggctc aggactatct caagagattt tatctctatg actcagaaac 120
aaaaaatgcc aacagtttag aagccaaact caaggagatg caaaaaattc tttggcctac 180
ctatactgga atggtaaact cccgcgtcat anaaataatg caanaagccc agatgtggag 240
tgccagatgt tgcagaatac tcactatttc caaatagccc aaaatggact tccaaagtgg 300
tcacctacag gatcgtatca tatactcgag acttaccgca tattacagtg gatcgattag 360
tgtcaaaggc tttaaacatg tggggcaaag agatccccct g 401

<210> 46
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 46
```
gtcagaattg tctttctgaa aggaagcact cggaatcctt ccgaactttc caagtccatc     60
catgattcan agatactgcc ttctctctct ctgggatttt atgtgtttct gatagtgaat    120
tgttgatgta tttgctactt tgcttctttt ctctttcaag acttgatcat tttatatgct    180
gnttggagaa aaaaagaact tttggtagca aggaggtttc aagaaatgat tttggatttt    240
ctgctgcgga atttctcggc acctacctgt agtatggggc acttggtttg gttgcagagt    300
aagaaggtgg aagaatgagc tgtacttggt taagcagttg aaaccttttt tgagcaggat    360
ctgtaaaagc ataattgaat ttgtttcacc cccgtggatt c                        401
```

<210> 47
<211> 401
<212> DNA
<213> Homo sapien

<400> 47
```
ggtctgcagc aatgcacttc aaccatacat actgcttcca ctagctaata ccaaatgcag     60
gttctcagat ccagacaaat ggaggaaaag aacatttatg cttccgtttc agaaagccaa    120
gtcgtagttt tggcccttcc tttctctaaa gtttattccc aaaaacaggt agcattcctg    180
attgggcaga gaagaggata ttttcagccc acatctgctg caggtatgtc attttctccc    240
atcttcactg tgactagtaa agatctcacc acttctcttt ggaatttcca actttgcttg    300
tgattgaatg tcacttcgtg aatttgtatt atgtcagatc acttggcatt gctcttccat    360
atgcatcaag ttgccaggca ctaaacccaa tgttcatgaa c                        401
```

<210> 48
<211> 430
<212> DNA
<213> Homo sapien

<400> 48
```
acataacttg taaacttttt ctgcttgggg gctgtaacag acagaagagt aaagactaca     60
aggattttct gaagatgctt caatgaaaat catcatttcc tctttagtca tcccaagtct    120
tggtttgaaa aacttgggca tggacttata cagaccttga accaccactg acttatcatt    180
gggtggcaga ccttgaaacc aagctctctg tgttacttct gaaagtgcat caattctgat    240
ttggctaaga acagaagaca aatactggga tcgtgattct gtgttatact ctagccacag    300
catagcagct tctcgaacgg tttcttcctt ttctacattt aaattgtcac tactgagaat    360
atctatcagt aggtcatgtg acagacctgc cccggggccg gcccgctcga tgcttgccga    420
atatcatggt                                                           430
```

<210> 49
<211> 57
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(57)
<223> n = A,T,C or G

<400> 49
ggtattaaca atatcangca ctcattcttc ccctcttatg aaanggatna attttta 57

<210> 50
<211> 327
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(327)
<223> n = A,T,C or G

<400> 50
gatggnggtn tccacaagan tnaangtncn tattaantan nncttgtaga nccacttnna 60
ttaattgnnn tatgnntgnc cttctggtgg ntgtngaagc ttcatatnnt ntttggacat 120
cattacacgt cttagctctt tnaagnacaa ctttaatgct atatgaattt tgccattttn 180
gctaacactg gtatgctccn ngcatccacc atnccacntg gaattattta ttncnttcat 240
attaatnttt tgtttaccaa atctnacttg acccgaacga actttctgn gtattttang 300
gccccnccat tcttactttt caagcct 327

<210> 51
<211> 236
<212> DNA
<213> Homo sapien

<400> 51
cgtctcgaag aagcgctgca ggccgatgat ggactgcacg tctgccttgt cctcagttaa 60
cttgttgaat tgcttgaaca tgcggcccac atcctgggca aactcctgtg gggagctgta 120
gggaggtgac aacttctcct ggaggcgggc acggatcagg gtcagatcca gggtgccacc 180
gggctggtcc agggagaagg tggagtcgta gccagacctg cccgggcggc cgctcg 236

<210> 52
<211> 291
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(291)
<223> n = A,T,C or G

<400> 52
ctcacatcct gggtccggct gtagagctgc accatggtgc tgagcgcccc ctccagctcc 60
ttgtagatgt aaaggacggc gaaggagctg tagtctgtgt ccacgatgcg cacgtccagg 120
tagcccaagg ccgggactct gaagttgtcc ctcggagccc accttcangt actcgggcat 180
ccacctggtt acagccnttc gncctcggna actccatntg gactttacag gccgccctcc 240
tctgtgggcc tgatggncct tgcaggacat nggaacacgg gagctcnctt t 291

<210> 53
<211> 95
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(95)
<223> n = A,T,C or G

<400> 53
gtctgtgcag tttctgacac ttgttgttga acatggntaa atacaatggg tatcgctgan 60
cactaagttg tanaanttaa caaatgtgct gnttg 95

<210> 54
<211> 66
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(66)
<223> n = A,T,C or G

<400> 54
cctnaatnat ntnaatggta tcaatnnccc tgaangangg gancggngga agccggnttt 60
gtccgg 66

<210> 55
<211> 265
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(265)
<223> n = A,T,C or G

<400> 55
atctttcttc tcagtgcctt ggccntgttg agtctatctg gtaacactgg agctgactcc 60
ctgggaagag aggccaaatg ttacaatgaa cttaatggat gcaccaagat atatgaccct 120
gtctgtggga ctgatggaaa tacttatccc aatgaatgcc gtgttatgtt tttgaaaatc 180
ggaaacgcca gacttctatc ctcattcaaa aatctgggcc ttnctgaaaa ccagggtttt 240
naaaatccca ttcnggtcnc cggcg 265

<210> 56
<211> 420
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(420)
<223> n = A,T,C or G

<400> 56
gagcggccgc ccgggcaggt cctcgcggtg acctgatggg atttcaaaac cttggttctc 60
agcaaggccc agatttttga atgangatag aagtctggcg tttccgattt tcaaaacata 120
acacgcattc attgggataa gtatttccat cagtcccaca gacngggtca tatatcttgg 180
gtgcatccat taagttcntt tgttaacatt tgggcctctc tttcccangg gaattcagct 240
cccagttgtt taccaanatt naactccacc ggggccaaag gcncttgaaa aaaaaaanaa 300
ttccttgttt accttccttg ggcttnaagt tctggcgtcc aaaagttcaa tttgaaaact 360
gcaccgcact taccacgtct cttcnagaan cctggggaca cctcggccgc gaccacgcta 420

<210> 57
<211> 170
<212> DNA

<213> Homo sapien

<400> 57
gaagcggagt tgcagcgcct ggtggccgcc gagcagcaga aggcgcagtt tactgcacag 60
gtgcatcact tcatggagtt atgttgggat aaatgtgtgg agaagccagg gaatcgccta 120
gactctcgca ctgaaaattg tctctccaga cctcggccgc gaccacgcta 170

<210> 58
<211> 193
<212> DNA
<213> Homo sapien

<400> 58
attttcagtg cgagagtcta ggcgattccc tggcttctcc acacatttat cccaacataa 60
ctccatgaag tgatgcacct gtgcagtaaa ctgcgccttc tgctgctcgg cggccaccag 120
gcgctgcaac tccgcttcat cggcttcgcc cagctccgcc attgttcgcc acctgcccgg 180
gcggccgctc gaa 193

<210> 59
<211> 229
<212> DNA
<213> Homo sapien

<400> 59
cgcaactctc gagcatttat atacaatagc aaatcatcca gtgtgttgta cagtctataa 60
tactccaaca gtctcccatc tgtattcaat ggcgccaccc aatacagtcc tttgtttgga 120
tgctggggag agtaatccct accccaagca ccatatagat aagaaaaccc tctccagttg 180
agctgaacca cagacggttt gctgatacct gcccgggcgg ccgctcgaa 229

<210> 60
<211> 340
<212> DNA
<213> Homo sapien

<400> 60
tcgagcggcc gcccgggcag gtcctctaaa gatcaaaaca cccctgtcgt ccaccctcct 60
cccactccag ggaagctgtg gtcatggtgg tgtggtgaac atcagcaaac cgtctgtggt 120
tcagctcaac tggagagggt ttcttatct atatggtgct tggggtaggg attactctcc 180
ccagcatcca aacaaaggac tgtattgggt ggcgccattg aatacagatg ggaaactgtt 240
ggagtattat aaactggtac aacacactgg atgatttgct attgtatata aatgctcgag 300
aattgcggat cacctatgga cctcggccgc gaccacgctg 340

<210> 61
<211> 179
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(179)
<223> n = A,T,C or G

<400> 61
tttttgtgac ggacgnttgg agtacatgtc ccaggatcac atccagcagc tagagtggct 60
gggacaagct ggcggnggcc aagcactgtt gaaacnatag gggtctgggn gnactcgggt 120
tnaagtggtt ggtccgantn ttnataacct tgtcngaacc nancatctcg gttgncang 179

<210> 62

<211> 78
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(78)
<223> n = A,T,C or G

<400> 62
```
agggcgttcg taacgggaat gccgaagcgt gggaaaaagg gagcggtggc nggaagacgg      60
ggatgagctt angacaga                                                    78
```

<210> 63
<211> 410
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(410)
<223> n = A,T,C or G

<400> 63
```
cccagttact tggggaggct gaggcaggga gaatcctttg aacccggngg gtgggaggtt      60
gcagtgagcc cgagatagca ccattgcact tccancatgg ggtggacaga gtgagactct     120
atctcaaaaa aaaagaaaag aaaaggaaag agattagatt aagattaagt acctacttcc     180
tntcccattt caagtcctga aaatagagga tcagaaatgt tgaggaattc tttaggatag     240
aaagggagat gggattttac ttatggggaa agaccgcaaa taaagactgn aacttaacca     300
cattccccaa gtgnaaggtg ttacccaaga agtaggaacc cttttggctn ttaccttacc     360
ttccngaaaa aaacttattn cttaaaatgg aaacccttaa agcccgggca                410
```

<210> 64
<211> 199
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(199)
<223> n = A,T,C or G

<400> 64
```
cttgttctca aaaaggtcaa agggagcccg acgaggaata aatagcaatg ccctgaattc      60
caactgacct tctacagaaa agtgcttgac tgccaagtgg tcttcccagt cattagtgag     120
gctcttgtag aattctccat actcctcttg ggngangnca tnagggtttn nggcccaaat     180
aggntgggcc tngttaagt                                                  199
```

<210> 65
<211> 125
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(125)
<223> n = A,T,C or G

<400> 65
agcggtacag ttctgtcctg gcatcatcat tcattgtagt atggtcaata ggtgccatga 60
aactcagtag cttgctaagg acatgaaacc gaagtttcct gcctttgctg gcctngtngn 120
gggta 125

<210> 66
<211> 204
<212> DNA
<213> Homo sapien

<400> 66
attcagaatt ctggcatcgg tatttctata aagtccatca gttagagcag gagcaggccc 60
ggagggacgc cctgaagcag cgggcggaac agagcatctc tgaagagccc ggctgggagg 120
aggaggaaga ggagctcatg ggcatttcac ccatatctcc aaaagaggca aaggttcctg 180
tggacctcgg ccgcgaccac gcta 204

<210> 67
<211> 383
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(383)
<223> n = A,T,C or G

<400> 67
tcagggcctc caggcagcca gttttgcagg anattcagca cctagngtct tcctgcctna 60
cgctcccaag aacctgctcc tgcaggggga acatcagaac tcgtccttga tgtcaaaatg 120
gggctggtct tnaggcttga agtccaggtt agggctgcca tcctcattga gaattctccg 180
ggcagtgtan ccgacgatgg ggtatttggc tttgtacact ttggtgaaaa cctnatccag 240
ggcctccagt tccttggccg tganacccgt antgtcatgg gtgaggtctg caggatccaa 300
ggacatcttg gctacccctc tagtggagtc cttccccgtc aaggcattgt aaggggctcc 360
tcgtccataa aactcctttt cgg 383

<210> 68
<211> 99
<212> DNA
<213> Homo sapien

<400> 68
tcacatctcc tttttttttt aactttttca aatttttgtg ttaaatagaa ggctaaaggg 60
ttagatttaa gtttctgcta cattgaccct atttaccta 99

<210> 69
<211> 37
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(37)
<223> n = A,T,C or G

<400> 69
gagaaggacn tacggncctg ntantanang aatctcc 37

<210> 70

<211> 222
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(222)
<223> n = A,T,C or G

<400> 70
gtgggtcatt tttgctgtca ccagcaacgt tgccacgacg aacatccttg acagacacat 60
tcttgacatt gaagcccaca ttgtccccag gaagagcttc actcaaagct tcatggcgca 120
tttcgacaga ttttacttcc gttgtaacgt tgactggagc aaaggtgacc accataccgg 180
gtttgagaac acccantcac ctgccccggg cggccgctcg aa 222

<210> 71
<211> 428
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(428)
<223> n = A,T,C or G

<400> 71
caggagtatt ttgtagaaaa gccagaagag cattagtaga tgtatggaaa tatacggtag 60
ggcacacgct gacagtactt ttcccaagcc acgccgtatt tcttcttaca gtggtactcg 120
tcacgagctt ctcggtggac aagcaacatg gtgaaataaa ttatgtagaa ataaggcaga 180
atgtggttaa aaccacatgg gagggaccac gccaaggcca tgatgagatc acccaagtaa 240
ttggggtggc gaacaaagcc ccaccatcca gaaactagaa naatttttcc cgttgaaata 300
tgaatggntt ttaaatgtgc aagctttgga tcactgggaa ttttcccgaa tgcctttttc 360
tganaattgc accttnggaa gantccttac cccaagnttc agaccattat ttnaaaagcn 420
ttggaact 428

<210> 72
<211> 264
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(264)
<223> n = A,T,C or G

<400> 72
gaataaagag cttactggaa tccagcaggg ttttctgccc aaggatttgc aagctgaagc 60
tctctgcaaa cttgatagga gagtaaaaag ccacaataga gcagtttatg aagatcttgg 120
aggagattga cacacttgat cctgccagaa aatttcaaag acagtagatt gaaaaggaaa 180
ggctttggta aaaaaaggtt caggcattcc tagccgantg tgacacagtg gagcanaaca 240
tctgcangag actgancggc tgca 264

<210> 73
<211> 442
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(442)
<223> n = A,T,C or G

<400> 73
ggcgaatccg gcgggtatca gagccatcag aaccgccacc atgacggtgg gcaagagcag 60
caagatgctg cagcatattg attacaggat gaggtgcatc ctgcaggacg gccggatctt 120
cattggcacc ttcaaggctt ttgacaagca catgaatttg atcctctgtg actgtgatga 180
gttcagaaag atcaagccaa agaacttcaa acaagcagaa agggaagaga agcgagtcct 240
cggtctggng ctgctgccaa gggagaatct ggtctcaatg acngtagaag gaccttcttc 300
caaagatact ggnattgctc gagttccact tgctggaact tcccggggcc caaggatcgc 360
aaggcttctg gcaaaagaaa tccanacttn ggccgggacc acctaancca attcacacac 420
tggcggccgt actagtggat cc 442

<210> 74
<211> 337
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(337)
<223> n = A,T,C or G

<400> 74
ggtagcagcg tctccagagc ctgatctggg gtcccagata cccaggcagc agcagccctg 60
gaggtaaagg gcaagctccc caatgtgagg ggagacccca ttcctggtca gccaggcttt 120
cagaggagat agcaggtcga gggagccaac gaagaagaga ctgccancag gggaaggact 180
gtcccgccaa ggacagaact gattcagggg ggtcaatgct cctctagaga agagccacac 240
agaactgggg ggtccaggaa ccatgaanct tggctgtggt ctaaggagcc aggaatctgg 300
acagtgttct gggtcatacc aggattctgg aattgta 337

<210> 75
<211> 588
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(588)
<223> n = A,T,C or G

<400> 75
catgatgagt tctgagctac ggaggaaccc tcatttcctc aaaagtaatt tatttttaca 60
gcttctggtt tcacatgaaa ttgtttgcgc tactgagact gttactacaa actttttaag 120
acatgaaaag gcgtaatgaa aaccatcccg tccccattcc tcctcctctc tgagggactg 180
gagggaagcc gtgcttctga ggaacaactc taattagtac acttgtgttt gtagatttac 240
actttgtatt atgtattaac atggcgtgtt tatttttgta tttttctctg gttgggagta 300
tgatatgaag gatcaagatc ctcaactcac acatgtagac aaacattagc tctttactct 360
ttctcaaccc cttttatgat tttaataatt ctcacttaac taattttgta agcctgagat 420
caataagaaa tgttcaggag agangaaaga aaaaaaatat atgttcccca tttatattta 480
gagagagacc cttantcttg cctgcaaaaa gtccaccttt catagtagta ngggccacat 540
attacattca gttgctatag gncagcactg aactgcatta cctgggca 588

<210> 76
<211> 196
<212> DNA
<213> Homo sapien

<400> 76
gcggtatcac agcctggccc ccatgtacta tcgggggggcc caggctgcca tcgtggtcta 60
tgacatcacc aacacagata catttgcacg ggccaagaac tgggtgaagg agctacagag 120
gcaggccagc cccaacatcg tcattgcact cgcgggtaac aaggcagacc tggacctgcc 180
cgggcggccg ctcgaa 196

<210> 77
<211> 458
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(458)
<223> n = A,T,C or G

<400> 77
agtagagatg gggtttcact gtgttaacca ggatggtctt gatctcctgg cctcgtgatc 60
tgcccgcctc ggcctcccaa agtgttggga ttacaggcgt gaaccaccgc acccggccag 120
aaatgttagt ttttccctat tctctctcct ttttcctatt atatacttgg tcaaccagac 180
agccatccta ccccanaatg gtaatgcctc ttcattcctc atatgaggga ataaaagaga 240
aaaaagcttt tggaaaacat ccacttatct aatcatccca aatatgtaat caaaagtata 300
caactcatgt gaagaataca ctggtaaaat gttantatag gccaaggtat cttgaattcc 360
tatatagaaa gctggtaaat gcccttttgg ctggaaccgc catcttccnn taattcnccc 420
aaaatgacca aacacaaagg gnaagangan aagccccc 458

<210> 78
<211> 464
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(464)
<223> n = A,T,C or G

<400> 78
tccgcaaatt tcctgccggc aaggtcccag catttgaggg tgatgatgga ttctgtgtgt 60
ttgagagcaa cgccattgcc tactatgtga gcaatgagga gctgcgggga agtactccag 120
aggcagcagc ccaggtggtg cagtgggtga gctttgctga ttccgatata gtgcccccag 180
ccagtacctg ggtgttcccc accttgggca tcatgcacca caacaaacag gccactgaga 240
atgcaaagga ggaagtgagg cgaattctgg ggctgctgga tgcttacttg aagacgagga 300
cttttctggt gggcgaacga gtgacattgg ctgacatcac agttgtctgc accctgttgt 360
ggctctataa gcaggntcta gaaccttctt ttcgcangac cttcggccgg accacgctta 420
acccaaattc cacacacttg cnggccgtac taanggaatc ccac 464

<210> 79
<211> 380
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(380)
<223> n = A,T,C or G

<400> 79

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ctgtatgacc agtttttcca tctccttcac ttctaccttg atcagctcga agtccagttc      60
agtgtaagaa atggtatcct tctccatgat gtcaattcgg acagttaggt ttaacagttt     120
cttttcatac acactaatta attggacata ttccctcact ttanaaagtt ctttctcaaa     180
cttctganaa aagaacatga actgtgaatt ccaagcgttc ccactctgtc cacgggaaaa     240
ggtggtgtct ggcagggaaa cagaacactg gcaggtccac ggtcatccac ggagccggtg     300
aaattgggaa aacaactggg acacagaacc tccgctgcct aagctgcggn tgggagcttg     360
gaacccgacc tggaactgga                                                 380
```

```
<210> 80
<211> 360
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(360)
<223> n = A,T,C or G

<400> 80
tcgagcggcc gcccgggcag gtcctcagag agctgtttgt tncgcttctt caaaaactcc      60
tattctccac ttctgctaaa ggactggatg acatcaattg tgatagcaat atttgtgggt     120
gttctgtcan ncancatcgc actcctgaac aaagtagatg ttggattgga tcagtctctt     180
tccacccaga tgactcctan atggtggatn atttcaaatc catcantcag tacctgcatg     240
cgnggtccgc ctgtgtnctt tgtcctgcag gangggcnct actacacttc ttccnagggg     300
canaacatgg tgtgcngcgg ccatgggctg gcaacantga ttcnctgctg cacccanatn     360
```

```
<210> 81
<211> 440
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(440)
<223> n = A,T,C or G

<400> 81
acgtggtccg gcgagtctga cctgcagata tgaactcctt gggaaaccta cattctgcct      60
cagacatact gggggcaaat ggctttaaaa gtctggctca gggagccaag attacagaaa     120
nccgttgagt cnccatacat ggacactgac aaaggaactg aagatatcca aacaagccct     180
cctggtcccg ngcctgcata aagatcggga ncggaacggt accngacgtc tgtggtcagg     240
ggttgtggaa aattggaaaa aaccagtcct gcccacattg acagggaagc ctcaacggaa     300
attgaacaga tngtcttatc accagtctcc cctcctggat cntgtctcgg ctcnggggan     360
tcagtgatca gtcctttcag gtggaagaag caaagaagat caacaanaag cngatcctct     420
cacctgntac cagcatatgg                                                 440
```

```
<210> 82
<211> 264
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(264)
<223> n = A,T,C or G

<400> 82
agcgtggtcg cggccgangt cctgacattc ctgccttctt atattaatta tacnaataaa      60
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acaaaatagt gttgaagtgt tggagcggcg aaaatttttg gggggtggta tggacagaga 120
atgggcgatn ttctcanggc tgcttcaagt gggattgggg cngcgtggga tcatncagtg 180
gganagattn cnctgaccgg antctnttgg tanggatnat cttgtgggga tgtgcaagag 240
ncattcgtct cctgaatgan tggt 264

<210> 83
<211> 410
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(410)
<223> n = A,T,C or G

<400> 83
ancgtggtcg cggccgangt ccacagttgt gggagagcca gccattgtgg gggcagctcc 60
acaggtaaga ctcgtgtcct gagcagcgca catcatccag gacaatgggt cctgagccct 120
gaccaaaccg ggcatttcct ggggctgaca tggcccagcc acagcccant tgcctgcaga 180
cgaaattggc atcattggtg tcccagtant catcacacac ggtgccccag gaacctccgg 240
tatangaact ccactcggcc tcnanacctg tcgcctccat tccncagcct caggggggcaa 300
actgggattc agatccttct gtgggtacag gtggtgatat cctgacaggc caactttctg 360
gcctgagtgt tgactgangc tgggcagacc tgcccgggcg gccgctcgaa 410

<210> 84
<211> 320
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(320)
<223> n = A,T,C or G

<400> 84
tcgaacggcc gcccgggcag gtctgcccca ggtgtatcca tttgccgccg atctctatca 60
naaggagctg gctaccctgc nncgacgaan tcctgaanat aatctcaccc ncccagatct 120
ctctgtcgca atggagatgt cgtcatcggt ggncctgatc acagggcatt ggactcagag 180
anangtnanc acagtgtnga agcgattgan nnagttcagt tgctggtctt acccgatntt 240
ggaaggaagg aaaacgtgtt angacgtatc tcgatgnant tgaccaaanc tgaangctnc 300
agggggcatc gcaaaganan 320

<210> 85
<211> 218
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(218)
<223> n = A,T,C or G

<400> 85
tcgagcggcc gcccgggcag gtctgctgcc cgtgctggtg ccattgcccc atgtgaagtc 60
actgtgccag cccagaacac tggtctcggg cccgagaaga ctcctttctc caggctntan 120
gtatcaccac taaaatctcc aggggcacca tnganatcct gggtgtccgc aatgttgcca 180
atgtctgtcc gcnnattggc tacccaactg ttgcatca 218

<210> 86
<211> 283
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(283)
<223> n = A,T,C or G

<400> 86
tcgacttctt gtgaaggttt tgganaaata tgtatcagtt cgttttattt gggtattcaa 60
taatatcctt ggtgataatg ctgactccat ggcttctgac cccaaaaatt gaccctgctg 120
ccactggttg tagccctgag attgattttt gtagccacga ttgtttcctc gtcctctgaa 180
gtnctggttg tanttccctc tgtngggcat tcccctctgt tgtanttccc tctgtttgan 240
taactaccac ggccaggaaa aacaggggca cgaaggtatg gat 283

<210> 87
<211> 179
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(179)
<223> n = A,T,C or G

<400> 87
agcgtggtcc cggccgatgt ctttctgtgt aagtgcataa cactccacat acttgacatc 60
cttcangtca cgggccagct nttcagcant ctctggagtg ataggctact gtntgttctn 120
ggcaagtgtc tcaanaatac aggggtcntc tctgagatga ntttcagtcc cgaaccctc 179

<210> 88
<211> 512
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(512)
<223> n = A,T,C or G

<400> 88
tcgagcggcc gcccgggcag gtcctancan agaatcacca aatttatgga gagttaacag 60
gggtttaaca ggaangaagt gcctttagta agttctcaag ccagangctg gaggcagcag 120
ctaaatcaga ggacaggatc ctcagtgaaa gtgagccatt cggggtggca tgtcactcca 180
ggaataagca caacttanaa acaaatgatt tcgtangata gcacagtgac attggtgcac 240
ttgtgaacct gaggccactg tgtcaaactg tgcactggtt gtgaataggg aganccaaaa 300
attatgtcct actgggtaat gagctttcaa tgggctcgat cctctcacnc tgaaagctct 360
gtagagcagc tcagaaccac aaccactccc aacattgacc cttctggggg tactgtctgt 420
ggcacccaca ggaaggagct ggagatcccc attaggactg tccacccaca cttgaagcca 480
caaaactgca cctcggccgc gaccaccgct ta 512

<210> 89
<211> 358
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(358)
<223> n = A,T,C or G

<400> 89
tcgagcgggc cgcccgggca ggtctgccag tccccatccc agacattctt tgcatctaag 60
ctgangtctg aactgagtgg ggtgggctgg tgtttccatc ctcacaactc cagtgagccg 120
ggtgtggccg tggcctgcgt ctctctggcg gttagtgatg ttggcatcat ccaccttttt 180
caaaacaaaa gcactggact gaagaanaat cccnccctgt ntccacccag tccatggttt 240
ttaataaaag ggttatnnaa gttgancaag ncatcaccac acacaancct aagaacnttt 300
ttcatcnntc cccaaaacaa acccncaccc tgggaactcc gggcgcgaac cacgccta 358

<210> 90
<211> 250
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(250)
<223> n = A,T,C or G

<400> 90
cgagcggccg cccgggcagg tctggatggg gagacggact ggaactgcgg cttcccgtgg 60
cctgcacgca caaggctccc cacggccgcc gaccttcttc agattcgatc gtatgtgtac 120
gcacnaagag ccaaatattg acattcacaa cttcgtggga atnttacccc anaagactgc 180
gacccccga tcaggcgana gcctgagcat agaagaacac cgctgtgggc ttggcactgt 240
gggncccatc 250

<210> 91
<211> 133
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(133)
<223> n = A,T,C or G

<400> 91
tcgagcggcc gnccgggcag gtcccgggtg gttgtttgcc gaaatgggca agttcntnaa 60
ncctgggaag gtggtgcntg tnctggctgg acgctactcc ggacgcnaag ctgtcntcgt 120
gangancatt gat 133

<210> 92
<211> 232
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(232)
<223> n = A,T,C or G

<400> 92
agcgtggtcg cggccgangt ctgtcacttt gcgggggtag cggtcaattc cagccaccag 60
agcatggctg taggggcgat ctgaggtgcc atcatcaatg ttcttcacga tgacaagctt 120

tgcgtccgga gtagcgtcca gccaggacaa gcaccacctt cccacgtntt cangaactng 180
cccatttcgg cataaccacc cgggacctgc ccgggcggnc gctcgaaaag cc 232

<210> 93
<211> 480
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(480)
<223> n = A,T,C or G

<400> 93
agcgtgggtc gcggccgang tctgtangct caccggccag agaagaccac tgtgagcatt 60
ttgccgtata tcctgccctg ccatttgttc actttttaaa ctaaaatagg aacatccgac 120
acacaccgtt tgcatcgtct tctcccttga tattttaagc attttcccat gtcgtgagtt 180
tctcagaaac atgtttttaa caattgtact atttagtcat ngtccattta ctataattta 240
tctgaccatt tccctactgt taaaatactt aagacggttt ctgatttttc cactatttaa 300
ataatgctgt gatgaatatc tttaaaatct tctgatttct tactttttc cccttagat 360
gcctggaagt ggtattttga ggtgaaagag tttgttcatt ttgaanatat ttctgtctct 420
ctctcgacct gatgtgtana cgctcacttc cagttagcag aaccacctta gtttgtgtct 480

<210> 94
<211> 472
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(472)
<223> n = A,T,C or G

<400> 94
tcgagcggnc gcccgggcag ggtctgatgt cantcacaac ttgaagggat gccaatgatg 60
taccaatccn atgtgaaatc tctcctctta tctcctatgc tgganaaggg attacaaagt 120
tatgtggcng ataannaatt ccatgcacct ctantcatcg atgagaatgg agttcatgan 180
ctggtgaacn atggtatctg aacccgatac cangttttgt ttgccacgat angantagct 240
tttattttg atagaccaac tgtgaaccta ccacacgtct tggacnactg anntctaact 300
atccncaggg ttttattttg cttgttgaac tcttncagct nttgcaaact tcccaagatc 360
canatgactg antttcagat agcattttta tgattcccan ctcattgaag gtcttatnta 420
tntcnttttt tccaagccaa ggagaccatt ggacctcggc cgcgaccacc tn 472

<210> 95
<211> 309
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(309)
<223> n = A,T,C or G

<400> 95
tcgagcggcc gcccgggcag agtgtcgagc cagcgtcgcc gcgatggtgt tgttggagag 60
cgagcagttc ctgacggaac tgaccagact tttccanaag tgccggacgt cgggcancgt 120
ctatatcacc ttgaagaant atgacggtcg aaccaaaccc attccaaaga aangtactgt 180
gganggcttt ganccgcag acaacnagtg tctgttaaga actaccgatn ggaaanaana 240

anatcagcac tgtgggtgag ctccnaggga agttaataan tttcggatgg gcttattcna 300
acctcctta 309

<210> 96
<211> 371
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(371)
<223> n = A,T,C or G

<400> 96
tcgagcggcc gcccgggcag gtccaccact cacctactcc ccgtctctat agatttgcct 60
gttctgggca gttctcagca atggaatcct actgtgtatc tttttgtgac tggttcttta 120
actcagcatc acattttcaa ggttcatcca tgctgcagcc tggctccgta ctggtgacag 180
tacttcattt ctctctccct tttgttcaga ccaaggtctc cctctgtccc caaggctaaa 240
gtgcagttgg tgtgatcatg gctcactgca gcctcaaact cctggactca aacagtcctc 300
ccatctcagc ctcccaaagt gctgatntta taagttgcaa gccctgcacc cagcctgtat 360
ctccagtttg t 371

<210> 97
<211> 430
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(430)
<223> n = A,T,C or G

<400> 97
tcgancggcc gcccgggcag gtttnttttn tttnttttt nnnngntagt atttaaagan 60
atttattaaa tcatcttatc accaaaatgg aaacatnttc caactagaaa catgcnacca 120
tcatcttccc cagtccagtc ncaangtcca atattttnct tgcctctgca gataaaaagt 180
tcnnattttt atacccactc ttactccccc ccaaaatttt aattcngtcc tnccctaaaa 240
ttncnccggg taacaantta ccaaaatggc naaccaatta ttttaaanaa aagttgcncn 300
ttnaaaangg aaactttntg gcaanttanc ctcttttccc ttcccacccc ccantttaag 360
gggaaaacaa tggcactttg ctcttgcttn aacccaaaat tgtcttccaa aaactattaa 420
aaatgttnaa 430

<210> 98
<211> 307
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(307)
<223> n = A,T,C or G

<400> 98
tcnaacggcc gcccnggcnn gtctngcngc acctgtgcct canccgtcga tacctggtcg 60
attgggacan ggaanacaat ntggttttca gggaggccac anatttggag aaacggatga 120
attctccttt attccgaant cagctccttg gtctccgtag anggtgatct tgaaattctc 180
ctgttttgaa aactttcttg aanaaacctt acctgctggt tgtatttggt ctcccactcg 240
gacaagtact cgttatccnn ggtactctta atgtgcccac gtnaactccc cgggntggca 300

actgggaa 307

<210> 99
<211> 207
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(207)
<223> n = A,T,C or G

<400> 99
gtccnggacc gatgttgcna agannttttct tggtccanta ggttcnaaaa aatgataanc 60
naggtntanc acgtgaagat ntntatanag tcttantnaa aacncntaga tctgnatgac 120
gataantcga anacnggggg aggggntgag gngaggtggn gtganggaag anntgttgat 180
aaaagannna gntgataaga anngagc 207

<210> 100
<211> 200
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(200)
<223> n = A,T,C or G

<400> 100
acntnnacta gaantaacag ncnttctang aacactacca tctgtnttca catgaaatgc 60
cacacacata naaactccaa catcaatttc attgcacaga ctgactgtaa ttaattttgt 120
cacaggaatc tatggactga atctaatgcn nccccaaatg ttgttngttt gcaatntcaa 180
acatnnttat tccancagat 200

<210> 101
<211> 51
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(51)
<223> n = A,T,C or G

<400> 101
tcgagcggcc gcccgggcag gtctgaccag tgganaaatg cccagttatt g 51

<210> 102
<211> 385
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(385)
<223> n = A,T,C or G

<400> 102

aacgtggtcg cggccgaagt ccatggtgct gggattaatc cactgtgacn gtgactctga 60
gttgagttgt ttttcaatct tctccaagcc tgtggactca tcctccacat ccttgggtag 120
taggatgaac atgctgaaga tgctnatttt gaaaaggaac tctatgaatc ttacaattga 180
atactgtcaa tgtttcccca tnacagaacg tggnccccca aggttccatc atctgcactg 240
ggtttgggtg ttctgtcttg gttgactctt gaaaagggac atttcttttt gttttcttga 300
attcanggaa atttcttca tccactttgc ccacaaaagt taggcagcat ttaaccccca 360
anggattttg ggtctgggtc cttcc 385

<210> 103
<211> 189
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(189)
<223> n = A,T,C or G

<400> 103
agcgtggtcg cggccgaagt ctgcagcctg ggactgaccg ggaagctctg attatttacc 60
caccacaggt angttgtgtt ctgaatctca agttcacagg ttaaggctac agcatcctca 120
tcctccacgg ggttggantt gttgctggtg atgaanggtt tggggtggct ctgcataact 180
gttgatctc 189

<210> 104
<211> 181
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(181)
<223> n = A,T,C or G

<400> 104
tcgagcggcc gcccgggcag gtccaggtct ccaccaangc accaccgtgg gaagctggta 60
attgatgccc accttgaagc cnntggggca ccatccncca actggatgct gcgcttggtt 120
ttgatggtgg caatggcaca ttgactcttt tgggaaccac ttcaccacgg tacaacaggc 180
a 181

<210> 105
<211> 327
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(327)
<223> n = A,T,C or G

<400> 105
tcgagcggcc gcccgggcag gtcttctgtg gagtctgcgt gggcatcgtg ggcagtgggg 60
ctgccctggc cgatgctcan aaccccagcc tctttgtaaa gattctcatc gtggananatct 120
ttggcagcgc cattggcctc tttggggtca tcgtcgcaat tcttcanacc tccanaatga 180
anatgggtga ctanataata tgtgtgggtn gggccgtgcc tcacttttat ttattgctgg 240
ttttcctggg acagaactcg ggcgcgaaca cgcttanccg aattccaaca cactggcggg 300
cgttactagt ggatccgagc tcggtac 327

<210> 106
<211> 268
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(268)
<223> n = A,T,C or G

<400> 106
agcgtggtcg cggccgangt ctggcgtgtg ccacatcggt cccacctcgc tttacaaaac 60
agtcctgaac ttnatctaat aaaattattg tacacnacat ttacattaga aaaaganagc 120
tgggtgtang aaaccgggcc tggtgttccc tttaagcgaa ngtggctcca cagttggggc 180
atcgtcgctt cctcnaagca aaaacgccaa tgaaccccna agggggaaaa aggaatgaag 240
gaactgnccn gggangnccg ctccgaaa 268

<210> 107
<211> 353
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(353)
<223> n = A,T,C or G

<400> 107
tcgagcggcc gcccgggcag gtggccaggc catgttatgg gatctcaacg aaggcaaaca 60
cctttacacn ctagatggtg gggacatcat caacgccctg tgcttcagcc ctaaccgcta 120
ctggctgtgt gctgccgcag gccccagcat caagatctgg gatttanagg gaaagatcnt 180
tgtnnatgaa ctgaancnta aattatcagt tccannacca ngcaaaaacc acccngtgca 240
ctccctggcc tggtctgctg atgggacctc gggcgcgaac acgctnancc caattccanc 300
acactgggcg gncgttacta ntggatccga actcnggtac caancttggc gtt 353

<210> 108
<211> 360
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(360)
<223> n = A,T,C or G

<400> 108
agcgtggtcg cggccgaagt cctggcctca catgaccctg ctccagcaac ttgaacagga 60
naagcagcag ctacatcctt aaggtccgga aagttagatg aagatttgga tcctgcattg 120
ncctgcctcc cacctatctc tcccnaatta taaacagcct ccttgggaag cagcagaatt 180
taaaaactct cccnctgccc tnttgaacta cacaccnacc gggaaaacct ttttcanaat 240
ggcacaaaaa tncnagggaa tgcatttcca tgaangaana aactgggtta cccaaaatta 300
ttgggttggg gaaatccngg gggggttttn aaaaaagggc aanccnccaa anaaaaaaac 360

<210> 109
<211> 101
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(101)
<223> n = A,T,C or G

<400> 109
atcgtggtcn cggccgaagt cctgtgtcct ggatgggccg tgtgcancga atccgttggc 60
gactcctaac taccaanaaa angactctcg gaagaaattt c 101

<210> 110
<211> 300
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(300)
<223> n = A,T,C or G

<400> 110
ccanggaaac ccagagtcac atgagatagg gtggctttcg ggacaggggg tcagangaat 60
ggtacatgga tctcagcccc tgatggacac ggaacaggtg tggtcagaac tcccangatt 120
ctgcatccan gatccagtct ctatagaagt tatggatcat tccttcattt cattcccccc 180
ttcatgaaaa aacttctgaa caagcctttt ttctcacttt ggggccctgt ttggcncaag 240
gtnttnantt ggggaaaaaa aaacaaatcc nttccnttan ccctccgtgg ggaatgacct 300

<210> 111
<211> 366
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(366)
<223> n = A,T,C or G

<400> 111
cgagcggccg cccgggcagg tccttgtgtt gccatctgtt ancattgatt tctggaatgg 60
aacanctttc tcaaagtttg gtcttgctan tcatgaagtc atgtcagtgt cttaagtcac 120
tgctgctcac ttccttaccc agggaatata ctgcataagt ttctgaacac ctgttttcan 180
tattcactgt tcctctcctg cccaaaattg gaagggacct catttaaaaa tcaaatttga 240
atcctgaaan aaaaacngga aatntttctc ttggaatttg gaatagaatt attcanttga 300
ataacatgtt ttttcccctt gccttgctct tcncaanaac atctggacct cggccgcgac 360
acctta 366

<210> 112
<211> 405
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(405)
<223> n = A,T,C or G

<400> 112
ctgactncta aacttctaat tcnatcaana taactactct ccttccgtct tncagagtgt 60
tcacaataaa tctgtgaatc tggcatacac agttgctgga aaattgttct tcctccacna 120

aaaggtcaat tgttcnccnc atgaaanaag ataaattgtt catccatcac tnctgaacca 180
tccaaaacgc cggcggaatt attnccccgt tattatgggg aacggaattt tnaataaatt 240
tgggaangaa tggggctttt attgttttgt tttccccctt tcttggcatt gattgggccg 300
caatgggccc cctcgctcan aanntgcccc ggggccggcc gctccaaaac cgaaattccc 360
anccacactt ggcgggccgt tactanttgg atccgaactc ggtta 405

<210> 113
<211> 401
<212> DNA
<213> Homo sapien

<400> 113
ggatagaaga gtatatgggt ttggcaccac ggggtggata ggcaaaacat ttggttgata 60
aggcgcagat tctgaactaa cttgtaaggc ttgtctggtt ttaggacagg taaaatgggg 120
gaatggtaag gagagtttat aggttttagg agcccatgct gtagcaggca agtgataaca 180
ggctttaatc ctttcaaagc atgctgtggg atgagatatt ggcatttgag cggggtaagg 240
gtgattaggt tttaatgaga tggtaagggg tgcatgatcc ggtccgccaa ggaagggaag 300
tagaggtatc ttatacttgt ggggttaagg tggggggat ataagaggga ggacgccaaa 360
ggaggctttg gattaggaat aaggggcggc aatgagatgc a 401

<210> 114
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 114
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ggaagcagca catggggttg aagaactgac tccacttccc aggactggtg gagctggtca 120
ccatggctgt ggtggcgggg aagacggaca gggtgacttc tggaagacag tgaagactga 180
aggttttcct ggcttctggg gctcatctgg ctctgattcc ggctccttct ccaggtcaag 240
atccaggtt cagagctact ttcttgggg actactnggg aatcccgttc tcatctgggg 300
gtngaggggg gacggggnaa gggncatgct tgtgacccag gtttcccacc tcggcccgcg 360
accacgctaa ggcccgaatt ncagcacact tggcggcccg t 401

<210> 115
<211> 401
<212> DNA
<213> Homo sapien

<400> 115
atccctgtaa gtctattaaa tgtaaataat acatacttta caacttctct tagtcggccc 60
ttggcagatt aaatctttgc aaaattccat atgtgctatt gaaaaatgaa ataaaacctc 120
agatgtctga attcttattt caaatacagt tatataatta ttttaaatta caatatacaa 180
tttctgttaa atacaactgt taagggattc tgagaacaat tataagatta taataatata 240
tacaaactaa cttctgaaat gacatgggtt gtttccttcc caccctccta ccctctcaaa 300
gagtttttgc atttgctgtt cctggttgca aaaggcaaaa gaaaatctaa aaatagtctg 360
tgtgtgtcca cgacatgctc gctcctttga gaatctcaaa c 401

<210> 116
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 116
ngatttaatt gnnagcttct ttttaatgga atnnttggct aaaatgaatt gatgattatg 60
aatatcccta ggaggagtta gcatggannn tgatcatttt cttngnactc ctttangaca 120
nggaaacagg natcagcatg anggtancan aaaccttatn accnangcgc acganctgac 180
ttcttccaaa gagttgnggt tccgggcagc ggtcattgcc gtgcccattg ctggagggct 240
gattctagtg ntgcttatta tgctggccct gaggatgctt ccaanatgaa aataagangc 300
t 301

<210> 117
<211> 383
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(383)
<223> n = A,T,C or G

<400> 117
aattgcaact ggacttttat tgggcagtta cnacaacnaa tgttttcana aaaatatttg 60
gaaaaaatat accacttcat agctaagtct tacagagaan aggatttgct aataaaactt 120
aagttttgaa aattaagatg cnggtanagc ttctgaacta atgcccacag ctccaaggaa 180
nacatgtcct atttagttat tcaaatacca gttgagggca ttgtgattaa gcaaacaata 240
tatttgttan aactttgntt ttaaattact gntncttgac attacttata aaggagnctc 300
taactttcga tttctaaaac tatgtaatac aaaagtatan ntttccccat tttgataaaa 360
gggccnanga tactgantag gaa 383

<210> 118
<211> 301
<212> DNA
<213> Homo sapien

<400> 118
ctgctagaat cactgccgct gtgctttcgt ggaaatgaca gttccttgtt ttttttgttt 60
ctgtttttgt tttacattag tcattggacc acagccattc aggaactacc ccctgcccca 120
caaagaaatg aacagttgta gggagaccca gcagcacctt tcctccacac accttcattt 180
tgaagttcgg gtttttgtgt taagttaatc tgtacattct gtttgccatt gttacttgta 240
ctatacatct gtatatagtg tacggcaaaa gagtattaat ccactatctc tagtgcttga 300
c 301

<210> 119
<211> 401
<212> DNA
<213> Homo sapien

<400> 119
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tacaacacag gaactgtgga tttatcagcg agagtggcag cgctttggtg tccgcatgtt 120
acgagagcgg gctgcgtttg tgtggtgaat ggggaggaaa tgtcactgcc gaagaccaaa 180
aacaagcttc ttggtataaa agactcttac agaatatgtg tattgtaatt tattgatctg 240
gatgcttaag tgtcatggac agtaaatgaa tttgaacttt atgtttgagg acatgacatt 300
gggtttgaaa atataaactg cttttgagca gtttaagtca gggcatttga gaataaaata 360
ggaactttct cttcagtttg taaaactctc ttgccctctc t 401

<210> 120
<211> 301
<212> DNA
<213> Homo sapien

<400> 120
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ctgccccaga ccctctccag aggttggggt gaccaactca tctggactca gacatatgaa 120
gaagctctat ataaatccaa gacaagcaac aaacccttga tgattattca tcacttgggt 180
gagtgcccac acagtcaagc tttaaagaaa gtgtttgctg aaaataaaga aatccagaaa 240
ttggcagagc agtttgtcct cctcaatctg gtttatgaaa caactgacaa acacctttct 300
c 301

<210> 121
<211> 2691
<212> DNA
<213> Homo sapien

<400> 121
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tgcggctgct ggctctcgcc ctggctctgg ccctgggccc cgccgcgacc ctggcgggtc 120
ccgccaagtc gccctaccag ctggtgctgc agcacagcag gctccggggc cgccagcacg 180
gccccaacgt gtgtgctgtg cagaaggtta ttggcactaa taggaagtac ttcaccaact 240
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cggagaagct gaggcctgag atggaggggc ccggcagctt caccatcttc gcccctagca 480
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aacttgcaga ctctgcgctt gagatcttca aacaagcatc agcgttttcc agggcttccc 2040
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atcatgttcc ccctaaacat ggctgttaac ccactgcatg cagaaacttg gatgtcactg 2340
cctgacattc acttccagag aggacctatc ccaaatgtgg aattgactgc ctatgccaag 2400
tccctggaaa aggagcttca gtattgtggg gctcataaaa catgaatcaa gcaatccagc 2460
ctcatgggaa gtcctggcac agtttttgta aagcccttgc acagctggag aaatggcatc 2520
attataagct atgagttgaa atgttctgtc aaatgtgtct cacatctaca cgtggcttgg 2580
aggcttttat ggggccctgt ccaggtagaa aagaaatggt atgtagagct tagatttccc 2640
tattgtgaca gagccatggt gtgtttgtaa taataaaacc aaagaaacat a 2691

<210> 122
<211> 683
<212> PRT
<213> Homo sapien

<400> 122
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Gly Pro Ala Ala Thr Leu Ala Gly Pro Ala Lys Ser Pro Tyr Gln Leu
            20   25   30
Val Leu Gln His Ser Arg Leu Arg Gly Arg Gln His Gly Pro Asn Val
        35   40   45
Cys Ala Val Gln Lys Val Ile Gly Thr Asn Arg Lys Tyr Phe Thr Asn
    50   55   60
Cys Lys Gln Trp Tyr Gln Arg Lys Ile Cys Gly Lys Ser Thr Val Ile
65   70   75   80
Ser Tyr Glu Cys Cys Pro Gly Tyr Glu Lys Val Pro Gly Glu Lys Gly
                85   90   95
Cys Pro Ala Ala Leu Pro Leu Ser Asn Leu Tyr Glu Thr Leu Gly Val
            100   105   110
Val Gly Ser Thr Thr Thr Gln Leu Tyr Thr Asp Arg Thr Glu Lys Leu
        115   120   125
Arg Pro Glu Met Glu Gly Pro Gly Ser Phe Thr Ile Phe Ala Pro Ser
    130   135   140
Asn Glu Ala Trp Ala Ser Leu Pro Ala Glu Val Leu Asp Ser Leu Val
145   150   155   160
Ser Asn Val Asn Ile Glu Leu Leu Asn Ala Leu Arg Tyr His Met Val
                165   170   175
Gly Arg Arg Val Leu Thr Asp Glu Leu Lys His Gly Met Thr Leu Thr
            180   185   190
Ser Met Tyr Gln Asn Ser Asn Ile Gln Ile His His Tyr Pro Asn Gly
        195   200   205
Ile Val Thr Val Asn Cys Ala Arg Leu Leu Lys Ala Asp His His Ala
    210   215   220
Thr Asn Gly Val Val His Leu Ile Asp Lys Val Ile Ser Thr Ile Thr
225   230   235   240
Asn Asn Ile Gln Gln Ile Ile Glu Ile Glu Asp Thr Phe Glu Thr Leu
                245   250   255
Arg Ala Ala Val Ala Ala Ser Gly Leu Asn Thr Met Leu Glu Gly Asn
            260   265   270
Gly Gln Tyr Thr Leu Leu Ala Pro Thr Asn Glu Ala Phe Glu Lys Ile
        275   280   285
Pro Ser Glu Thr Leu Asn Arg Ile Leu Gly Asp Pro Glu Ala Leu Arg
    290   295   300
Asp Leu Leu Asn Asn His Ile Leu Lys Ser Ala Met Cys Ala Glu Ala
305   310   315   320
Ile Val Ala Gly Leu Ser Val Glu Thr Leu Glu Gly Thr Thr Leu Glu
                325   330   335
Val Gly Cys Ser Gly Asp Met Leu Thr Ile Asn Gly Lys Ala Ile Ile
            340   345   350

Ser Asn Lys Asp Ile Leu Ala Thr Asn Gly Val Ile His Tyr Ile Asp
355 360 365
Glu Leu Leu Ile Pro Asp Ser Ala Lys Thr Leu Phe Glu Leu Ala Ala
370 375 380
Glu Ser Asp Val Ser Thr Ala Ile Asp Leu Phe Arg Gln Ala Gly Leu
385 390 395 400
Gly Asn His Leu Ser Gly Ser Glu Arg Leu Thr Leu Leu Ala Pro Leu
405 410 415
Asn Ser Val Phe Lys Asp Gly Thr Pro Pro Ile Asp Ala His Thr Arg
420 425 430
Asn Leu Leu Arg Asn His Ile Ile Lys Asp Gln Leu Ala Ser Lys Tyr
435 440 445
Leu Tyr His Gly Gln Thr Leu Glu Thr Leu Gly Gly Lys Lys Leu Arg
450 455 460
Val Phe Val Tyr Arg Asn Ser Leu Cys Ile Glu Asn Ser Cys Ile Ala
465 470 475 480
Ala His Asp Lys Arg Gly Arg Tyr Gly Thr Leu Phe Thr Met Asp Arg
485 490 495
Val Leu Thr Pro Pro Met Gly Thr Val Met Asp Val Leu Lys Gly Asp
500 505 510
Asn Arg Phe Ser Met Leu Val Ala Ala Ile Gln Ser Ala Gly Leu Thr
515 520 525
Glu Thr Leu Asn Arg Glu Gly Val Tyr Thr Val Phe Ala Pro Thr Asn
530 535 540
Glu Ala Phe Arg Ala Leu Pro Pro Arg Glu Arg Ser Arg Leu Leu Gly
545 550 555 560
Asp Ala Lys Glu Leu Ala Asn Ile Leu Lys Tyr His Ile Gly Asp Glu
565 570 575
Ile Leu Val Ser Gly Gly Ile Gly Ala Leu Val Arg Leu Lys Ser Leu
580 585 590
Gln Gly Asp Lys Leu Glu Val Ser Leu Lys Asn Asn Val Val Ser Val
595 600 605
Asn Lys Glu Pro Val Ala Glu Pro Asp Ile Met Ala Thr Asn Gly Val
610 615 620
Val His Val Ile Thr Asn Val Leu Gln Pro Pro Ala Asn Arg Pro Gln
625 630 635 640
Glu Arg Gly Asp Glu Leu Ala Asp Ser Ala Leu Glu Ile Phe Lys Gln
645 650 655
Ala Ser Ala Phe Ser Arg Ala Ser Gln Arg Ser Val Arg Leu Ala Pro
660 665 670
Val Tyr Gln Lys Leu Leu Glu Arg Met Lys His
675 680

<210> 123
<211> 1205
<212> DNA
<213> Homo sapien

<400> 123
ccagtcagca gagggacagg aatcattcgg ccactgttca gacgggagcc acacccttct 60
ccaatccaag cctggcccca gaagatcaca aagagccaaa gaaactggca ggtgtccacg 120
cgctccaggc cagtgagttg gttgtcactt actttttctg tggggaagaa attccatacc 180
ggaggatgct gaaggctcag agcttgaccc tgggccactt taaagagcag ctcagcaaaa 240
agggaaatta taggtattac ttcaaaaaag caagcgatga gtttgcctgt ggagcggtgt 300
ttgaggagat ctgggaggat gagacggtgc tcccgatgta tgaaggccgg attctgggca 360
aagtggagcg gatcgattga gccctgcggt ctggctttgg tgaactgttg gagcccgaag 420
ctcttgtgaa ctgtcttggc tgtgagcaac tgcgacaaaa cattttgaag gaaaattaaa 480
ccaatgaaga agacaaagtc taaggaagaa tcggccagtg ggccttcggg agggcggggg 540

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gaggttgatt ttcatgattc atgagctggg tactgactga gataagaaaa gcctgaacta     600
tttattaaaa acatgaccac tcttggctat tgaagatgct gcctgtattt gagagactgc     660
catacataat atatgacttc ctagggatct gaaatccata aactaagaga aactgtgtat     720
agcttacctg aacaggaatc cttactgata tttatagaac agttgatttc ccccatcccc     780
agtttatgga tatgctgctt taaacttgga agggggagac aggaagtttt aattgttctg     840
actaaactta ggagttgagc taggagtgcg ttcatggttt cttcactaac agaggaatta     900
tgctttgcac tacgtccctc caagtgaaga cagactgttt tagacagact ttttaaaatg     960
gtgccctacc attgacacat gcagaaattg gtgcgttttg tttttttttc ctatgctgct    1020
ctgttttgtc ttaaaggtct tgaggattga ccatgttgcg tcatcatcaa cattttgggg    1080
gttgtgttgg atgggatgat ctgttgcaga gggagaggca gggaaccctg ctccttcggg    1140
ccccaggttg atcctgtgac tgaggctccc cctcatgtag cctccccagg cccagggccc    1200
tgagg                                                                1205

      <210> 124
      <211> 583
      <212> DNA
      <213> Homo sapien

      <400> 124
ccaagaagca gtggccttat tgcatcccaa accacgcctc ttgaccaggc tgcctccctt      60
gtggcagcaa cggcacagct aattctactc acagtgcttt taagtgaaaa tggtcgagaa     120
agaggcacca ggaagccgtc ctggcgcctg gcagtccgtg ggacgggatg gttctggctg     180
tttgagattc tcaaaggagc gagcatgtcg tggacacaca cagactattt ttagattttc     240
ttttgccttt tgcaaccagg aacagcaaat gcaaaaactc tttgagaggg taggagggtg     300
ggaaggaaac aaccatgtca tttcagaagt tagtttgtat atattattat aatcttataa     360
ttgttctcag aatcccttaa cagttgtatt taacagaaat tgtatattgt aatttaaaat     420
aattatataa ctgtatttga aataagaatt cagacatctg aggttttatt tcatttttca     480
atagcacata tggaattttg caaagattta atctgccaag ggccgactaa gagaagttgt     540
aaagtatgta ttatttacat ttaatagact tacagggata agg                      583

      <210> 125
      <211> 783
      <212> DNA
      <213> Homo sapien

      <400> 125
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atggaggaaa agaacattta tgcttccgtt tcagaaagcc aagtcgtagt tttggccctt     120
cctttctcta aagtttattc ccaaaaacag gtagcattcc tgattgggca gagaagagga     180
tattttcagc ccacatctgc tgcaggtatg tcattttctc ccatcttcac tgtgactagt     240
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tgaatttgta ttatgtcaga tcacttggca ttgctcttcc atatgcatca agttgccagg     360
cactgttgcg ctgtcgggcc cactggaatc cacgggggtg aaacaaattc aattatgctt     420
ttacagatcc tgctcaaaaa aggtttcaac tgcttaacca agtacagctc attcttccac     480
cttcttactc tgcaaccaaa ccaagtgccc catactacag gtaggtgccg agaaattccg     540
cagcagaaaa tccaaaatca tttctgaaac ctccttgcta acaaaagttc tttttttctc     600
caaacagcat ataaaatgat caagtcttga aagagaaaag aagcaaagta gcaaatacat     660
caacaattca ctatcagaaa cacataaaat cccagagaga gagaaggcag tatctctgaa     720
tcatggatgg acttggaaag ttcggaagga ttccgagtgc ttcctttcag aaagacaatt     780
ctg                                                                   783

      <210> 126
      <211> 604
      <212> DNA
      <213> Homo sapien

      <400> 126
cctgctagaa tcactgccgc tgtgctttcg tggaaatgac agttccttgt ttttttgtt       60
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tctgtttttg ttttacatta gtcattggac cacagccatt caggaactac cccctgcccc 120
acaaagaaat gaacagttgt agggagaccc agcagcacct ttcctccaca caccttcatt 180
ttgaagttcg ggtttttgtg ttaaagttaa tctgtacatt ctgtttgcca ttgttacttg 240
tactatacat ctgtatatag tgtacggcaa aagagtatta atccactatc tctagtgctt 300
gactttaaat cagtacagta cctgtacctg cacggtcacc cgctccgtgt gtcgccctat 360
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gcctttttat tacaagtctt gtactcaatg acttttgtca tgacattttg ttctacttat 480
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tgtaattaav agatgtagcc tttattaaaa ttttatattt ttcaaaaaaa aaaaaaaaaa 600
aaaa 604

<210> 127
<211> 417
<212> DNA
<213> Homo sapien

<400> 127
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tttgtctcca atttcaaact gacctaaggc tcttactcct ggatttttg tttttaaacc 180
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<210> 128
<211> 657
<212> DNA
<213> Homo sapien

<400> 128
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gggagaaaat gacatacctg cagcagatgt gggctgaaaa tatcctcttc tctgcccaat 480
caggaatgct acctgttttt gggaataaac tttagagaaa ggaagggcca aaactacgac 540
ttggctttct gaaacggaag cataaatgtt cttttcctcc atttgtctgg atctgagaac 600
ctgcatttgg tattagctag tggaagcagt atgtatggtt gaagtgcatt gctgcag 657

<210> 129
<211> 1220
<212> DNA
<213> Homo sapien

<400> 129
cgcgtgctcg gctcacacca acaaggcaag ccaaaggcgc ccctccccag agggatccct 60
aacgtgccca gcatgtagat tctggactaa cagacaacat acattcaccg ctggtcaccc 120
agatcctcat tcaaacccac tgctggcaca tccctttcct tactttgccc tgtgctacca 180
gccacggaag gagcctctct tgttttttct ataaaatggg taggcaggag aaaagcaggt 240
gccctaagat tgctctaagg cccagcatgt ggttacagtt ctctgacttg cagaacctgc 300
caggtgtatg gctacaagtt atcctcgtgc tgatctgtct cattactaag ttaatggaga 360
agacagaaag gtaaaaatca cgtgtagcaa gaacaactct tatttcacaa actcaggtat 420
gaaacgaaac gcctgtcctt catggaactg ctttagctc ctgtcttttc aaaatggcag 480
agggagttcc tacacacact ttttccctgg aggccaaggt ctaggggtag aaaggggagg 540

ggtggggcta ccaggtagca gttgacaacc caaggtcaga ggagtggccc tcagtgtcat 600
ctgtccacag tgatacctgc caagatgacc actgacccac atctggtctt agtcattggt 660
ctcctcagat ttctggggcc acctgcaagc cccattccat tcctacagat ctctcagcca 720
cctgtaagtc ctttgtgaag atgtgggtga cacaggggga caggaaaacc catttctcaa 780
cccagatcca tgtctccact gcttctactc tgggttggga ttcaggaaga caggcacagt 840
cctctctgtt catagaaaca cctgccagtg tcaaggattc cagtcaggtg tctatcccaa 900
ctggtcaggg agagaagggc agacccattc tcaaagacca ccatgtccaa ggtctgacag 960
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tttatctaaa ggactttggc ttttgtaaat cacaagccaa taatagactt ttttctcccc 1140
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gagagtgagc caattaacag 1220

<210> 130
<211> 1274
<212> DNA
<213> Homo sapien

<400> 130
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ccccaaagac tgcccacggg gtcatcactc ctgtgacgaa atgagggctg gattgaagat 120
gttctgctga gcaccccccct ggtcatcttt ggggtctcag aagagccata atcatgacca 180
ttctcagcat ctgaataatc aggttctctc caagtgcttg gcaagttctg attgtcctca 240
gcactgggat agtctggctc cccaaaaaag ggtggagagt taggttgaat gtcagcgcct 300
ggataatcag gctttcccag agagtctgcg tatggattga ttctaaaact tgtatgttcc 360
agattctttc tggatcctgg atggttcaaa ttggctctgg gtccaggatg atcagagttg 420
ctctgagctc cagggtagtc cggttctaag gagccaaaat gatctggatg tgttctggag 480
cctgcatagt ttccactgct gctggagcct gcaaaatcag gatttcgttg agatccaggg 540
tagtctggtt gtctggatga tgctcggtgg tagggatgac tctgaaattc actataatct 600
ggctctggta gagaggtagg atggtctggg cttgttctag aggctgcaga gtatgcattg 660
cttctggtgc cagaatagtc tggattactc agagatctag gataatttgg ttctgccaga 720
gacccaggat agtctggacg tgttctggag gctacagagt atggattgct cctggtgccg 780
gggtaatctg gattgttcag aggacctgga acatctggat aaccttgagt tttcaaatac 840
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ttattcctgt agtaggcaga catgttggta tggactcttc accctggagt ggtaaactgt 960
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agaacactgg agtcacgtgt ccatgggtcc ttcaggctgg cttttgatgg gagctgggat 1140
gcagatgatt tacggagggt tataatctgt gatgctggtc tgaagtctga atattccaag 1200
ttgctgactg caggcagagc ctcatgtcct cctggcgctc ctgttgccgc tgcttgcgct 1260
ggccctcggg tcga 1274

<210> 131
<211> 554
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(554)
<223> n = A,T,C or G

<400> 131
ctgtaattct gccttttcta ccttcattcc atccttcctc tgcccagata aagkccagca 60
gaaattcctc ctttctacct ctctgggact ctgagacagg aaatcttcaa ggaggagttt 120
ttccctcccc actattctta ttctcaaccc ccagaggaac caaggctgct gtacccacct 180
cagggacaga actccacact atagtgggaa agcttcaggg acccctcctt ttagtgctca 240
gggctcacct atgctactgg tcctttggc aaaaaaggaa aatgatagag ccagggttgc 300

ccctgatgta gcagccttac tgtggagggg ccaaagctgg tgttcagagc tcacccaagg 360
agggaggtga taaggtgtca tgcgttctgc tgaacccact ggntggtatg aacatgaggc 420
ttggggtgag ggaaaccaag taggggttgg agaaggagca gcacctttgt macacctggc 480
tacccatagc tagctttctg ccctcaaaaa ctcagccttc aagggatcca gcccacacac 540
gccacaggca gcag 554

<210> 132
<211> 787
<212> DNA
<213> Homo sapien

<400> 132
ctggtcaccc aactcttgtg gaagagggga attgagatcg agtactgaat atctggcaga 60
gaggctggaa tccttcagcc ccagagccca gggaccactc cagtagatgc agagaggggc 120
ctgcccaggg gtcagggcag tgggtatcac tggtgacatc aagaatatca gggctgggga 180
ggcatctttg tttcctggtg ccctcctcaa agttgctgac actttgggga cgggaagggg 240
tagaagtagg gctgctcctt ttggagctgg agggaataga cctggagaca gagttgaggc 300
agtcgggctg tccaggttct aagcatcaca gcttctgcac tgggctctga ggagattctc 360
agccagagga tcccagcctc ctcctccctc aaatgtcagt ccaagcaaat accaaagcaa 420
cgcatcgatt ttgtggaagt caattagaga tgtggggagc tatcggagac aagcactatt 480
gtacctttc acctccacac ttgtcacaag cagggactgt ctcctcccca ctttgcttgc 540
cacgcctgcc atggcttgag ctggggtgag gagtggtctt tatcttcttt gggagatcct 600
gactggttgc gcacttgcta agggcaggaa gtctggaggg ctgcaggaat ggtgccgttg 660
ataaacaggt ggacttataa tcatcatgca ctgcaattgt agaacatagt ctcctgcctt 720
ttctcatttg tataattgtc tgggtcaata ttctcccaat attgggaggg gctctgcagc 780
cctccag 787

<210> 133
<211> 219
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(219)
<223> n = A,T,C or G

<400> 133
tactgctcta agttttgtna aatttttcat attttaattt caagcttatt ttggagagat 60
aggaaggtca tttccatgta tgcataataa tcctgcaaag tacaggtact ttgtctaaga 120
aacattggaa gcaggttaaa tgttttgtaa actttgaaat atatggtcta atgtttaagc 180
agaattggaa nagactaata tcggttaaca aataacaac 219

<210> 134
<211> 234
<212> DNA
<213> Homo sapien

<400> 134
gattttaaaa acatcatgac tttgaactga aaaacataca cgtttagcac acaaatattg 60
taatatgaat gaactccaac tccatttgaa aacatgtgaa tcaaagtaca gttttagaag 120
ttagtaattc acatttaagc aagttagcgc cttgctgaat acagcctttg taaaaaagag 180
acttagtgca tattttaatg gtacattgtg gttttgtacc atttggttga gttg 234

<210> 135
<211> 414
<212> DNA
<213> Homo sapien

<400> 135
ctccagcctg gctatatccg gtcccgctat aacctgggca tcagctgcat caacctcggg 60
gctcaccggg aggctgtgga gcactttctg gaggccctga acatgcagag gaaaagccgg 120
ggcccccggg gtgaaggagg tgccatgtcg gagaacatct ggagcaccct gcgtttggca 180
ttgtctatgt taggccagag cgatgcctat ggggcagccg acgcgcggga tctgtccacc 240
ctcctaacta tgtttggcct gccccagtga cagtgggacg ggctgccctg tgagtgtcca 300
cctggggatt aaatatgtct tcaacaaggg aggcctggct tctacaatgg tttaggtaaa 360
ggggcctttg aagtagttct ggccaggctt gcaatacaca caacacaaga gcca 414

<210> 136
<211> 461
<212> DNA
<213> Homo sapien

<400> 136
gaagtgatta ataggtttat ttgcatatac acagagaaga gtcagcattg ttgggtgaga 60
agaggcaggc tgtgaggagg taaggcttca gcagaggaag gcaccttgac agacaacacg 120
agactcctat taaatcagca cagttgcaaa cttcacctgc ctcaagccaa cagctcattg 180
aactcatatg tcgattgaga atcatttaca aaaccaggag agaaacaatg ggaagagcaa 240
cggtctctca tccctggacc tgacactcaa aacattatgt acaggatgca ggaacaaaat 300
ctgtctgatc agtgccctct cctgctggga aaaacaccca tcacggaaga atttggggat 360
taaatatgtc ttcaacaagg gaggcctggc ttctacaatg gtttaggtaa aggggccttt 420
gaagtagttc tggccaggct tgcaatacac acaacacaag a 461

<210> 137
<211> 269
<212> DNA
<213> Homo sapien

<400> 137
atagcaaatg gacacaaatt acaaatgtgt gtgcgtggga cgaagacatc tttgaaggtc 60
atgagtttgt tagtttaaca tcatatattt gtaatagtga aacctgtact caaaatataa 120
gcagcttgaa actggcttta ccaatcttga aatttgacca caagtgtctt atatatgcag 180
atctaatgta aaatccagaa cttggactcc atcgttaaaa ttatttatgt gtaacattca 240
aatgtgtgca ttaaatatgc ttccacagt 269

<210> 138
<211> 452
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(452)
<223> n = A,T,C or G

<400> 138
ctccatggga ggcaaaatat agagaattta tggtgcccaa ctcttatgta atcactggac 60
taatcttccc tggtaactat gcaacatttg gacagaaagg cacacaaaaa agtttaaata 120
tttcatgtgc caatctggaa aaaaataatt taaatcaaca gaacagacag tacatctaca 180
caaatgagga aagcagaaaa gatacctcac attcatttat ctcaggtttc aaagtggctt 240
caatgctaaa gtaaatgtat taacatttgg aaaatacaag acaatttttt tgtttgtttt 300
caattttttt agctctatac aatgattaca acataagaca aaaaaaaaaa aaaaacacaa 360
aaaacaaaac aaaaaaggag ttcaggactt gttatcagtg tccaagtggc taanaactgg 420
ttcccataac aagcattgaa agttaaggcc cc 452

<210> 139

<211> 474
<212> DNA
<213> Homo sapien

<400> 139
tgtgcctcat tgaggttaca attgaaacag atgtgagcac ctgagagact ttccctgatt 60
atattcctcc acaaaccact gtaccatatt accttatttt atcttcttga aattcttatt 120
cattggcttg tttgttgtct ctttgcatta gatatatgta agctccttgg cataaatttg 180
acattggtag gggactgaca ttctaacctg gcccaggccc taggagagag ataactccac 240
aaagcagcac atactatctt aggttagcag ggagctaact caccatgtag cagatgaaaa 300
aaaccaaacc cagcactgtg cataaatacc acttgccaag aagtcaggtc ctcggcaacc 360
gagaatcaac ctcagcacaa acgcaggtgg ctgggctctg ttccccctta gccaccacct 420
cagcctctcc cctcccctgc cccaagtgcc caagagcttg gctctctgtg cttt 474

<210> 140
<211> 487
<212> DNA
<213> Homo sapien

<400> 140
cttccctgcc tcgtgttcct gagaaacgga ttaatagccc tttatccccc tgcaccctcc 60
tgcaggggat ggcactttga gccctctgga gccctcccct tgctgagcct tactctcttc 120
agactttctg aatgtacagt gccgttggtt gggatttggg gactggaagg gaccaaggac 180
actgacccca agctgtcctg cctagcgtcc agcgtcttct aggagggtgg ggtctgcctg 240
tcctggtgtg gttggtttgg ccctgtttgc tgtgactacc cccccccctc cccgaaccga 300
gggacggctg cctttgtctc tgcctcagat gccacctgcc ccgcccatgc tccccatcag 360
cagcatccag actttcagga agggcagggc cagccagtcc agaaccgcat ccctcagcag 420
ggactgataa gccatctctc ggagggcccc ctaataccca agtggagtct ggttcacacc 480
ctggggg 487

<210> 141
<211> 248
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(248)
<223> n = A,T,C or G

<400> 141
ttaaagatgg ggaaatgagg cctgnaaata gaaaagattt gcctagagtc acacacactg 60
tcaggtcagg tagagtcaaa atcaggcacc ccgactcaca gactgcttca cattgccatc 120
agagattgtc ctgcaacaat attatgttta gttctactgc agaatgataa ctggatctta 180
ccccctttgc ctgatctggc cacaaacttg tttttcaggt ctttccatta ggctctcttc 240
agctaatt 248

<210> 142
<211> 173
<212> DNA
<213> Homo sapien

<400> 142
tactaagatt gtccaagcct ccctcttaaa actttctttc cctttagagg aatcattact 60
tcgtattaaa agtttctact tccttgtaga atatctacat ccaatgggcc atggcacaaa 120
atttaagtct agaaagaatc ttaaaggctc atcttatagt aaccagaggc agg 173

<210> 143

<211> 511
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(511)
<223> n = A,T,C or G

<400> 143
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cctcgtcaga ggggtggttc ctggtnacct gtactccacg gacctcggtg aagcaaaagc     60
ttcagggcag agggaatgag gcaacccagt ggcagccccg ctgggccccg tggctcctgc    120
tctcctattg gacgtagagg caggggagag acttctctat acaaatattc tcatcacaga    180
agggatgatc cttgctgctc tgccgtaggg tttttgatgc tgagctatgc tgcacatgac    240
gttaacctaa agaacttgga ctgagctttt aaaaaaggac agcaaacaat tttataatcc    300
ttaaagtgta atagacggtt acactagtgc agggtattgg ggaggctctt tgggtgtgga    360
ggctgtcact tgtatttatt gtgactctaa atctttgata gtaaaacaaa tgtaaaaaga    420
aatgtttgcc accagatggg aatagaagtt ccaataagca ggctggaatg ggtggctata    480
cgttgtatca cgaggaagtt ttagactctg a                                   511
```

<210> 144
<211> 190
<212> DNA
<213> Homo sapien

<400> 144
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cattcttctg tcacatgcca attcagttgt caatcccatt gtctatgctt accggaaccg     60
agacttccgc tacacttttc acaaaattat ctccaggtat cttctctgcc aagcagatgt    120
caagagtggg aatggtcagg ctggggtaca gcctgctctc ggtgtgggcc tatgatctag    180
gctctcgcct                                                           190
```

<210> 145
<211> 169
<212> DNA
<213> Homo sapien

<400> 145
```
gatgtggtta tctcctcaga tggccagttt gccctctcag gctcctggga tggaaccctg     60
cgcctctggg atctcacaac gggcaccacc acgaggcgat ttgtgggcca taccaaggat    120
gtgctgagtg tggccttctc ctctgacaac cggcagattg tctctggat               169
```

<210> 146
<211> 511
<212> DNA
<213> Homo sapien

<400> 146
```
atctagagaa gatttgggaa acacatgata gctatggtta aatacttaac agggcaatca     60
cagggaagat gactagattt cctaacatcc atgagtgaaa tttatagaag tatactctct    120
gacttgatat aaaggaagat tttaaaaaac atgactgttc aggagtgttc aagtagggtc    180
agatgaccag tgattgggaa tacttcgtaa gcaggagcaa gtaagatctg agccactgtt    240
ctatcggtag ggtgtctgtg gtattccttg gtcaaagaag tactctaagc aacttcagtc    300
tcacgaatta ctatcaccct cgtgggcata catgatggtt accctaaaga ggaagtttca    360
gaaggcagta atattggatc ctggaatagt cagacaggag ccttcatgca gataccettt    420
tcagttctcc atacacccat tcacaagtgg tcacaaaaac acccagtacc tttacttggc    480
tttacccact taacaatatg ctcaatatga g                                   511
```

<210> 147

<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 147
gaccagttga gttcttcctg gctattgtat aatccacagc cacactgtga aagcaaatct 60
ggccagttag caacacaggg agaatctgcc tgaactgacc aaaggtgtcc atacttcatg 120
tcagtgagaa tttcacctcc atcatgttct aaagagccaa caacagattc tagggcactg 180
caaaatgctt cagcaattaa ttgaagttct gtttgagtac attcatcatc tttgagaatg 240
ctttctgggt cgttgtgagt cttgtgtctg atatatgcag ccaaatgagt ttcagtacag 300
ccacctccca acaaagccca tggttccttg agtgttaact gcaggacatg cagtgccgtc 360
tgacacgtga gcttcagctc atcccangca gtgtcatttc tgttgcagag aagccaagct 420
g 421

<210> 148
<211> 237
<212> DNA
<213> Homo sapien

<400> 148
acacaccact gttggccttc catctgggtt aagtcaactg tgagtagaaa ccgaagataa 60
cagttttgta ttcataatgg ccttttcata ctccaagtac ttttgagcac agagcctctt 120
gcttctgacc tggcacttgg aacacagata tatatatctt ttgttctgtc cctgggaaac 180
tgatatttgt gtaagacaac caccagatat tttctctaat aaaatcttct aaaatta 237

<210> 149
<211> 168
<212> DNA
<213> Homo sapien

<400> 149
agagaaagtt aaagtgcaat aatgtttgaa gacaataagt ggtggtgtat cttgtttcta 60
ataagataaa ctttttgtc tttgctttat cttattaggg agttgtatgt cagtgtataa 120
aacatactgt gtggtataac aggcttaata aattctttaa aaggagag 168

<210> 150
<211> 68
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(68)
<223> n = A,T,C or G

<400> 150
ggtggggttt ggcagagatg antttaagtg ctgtggccag aagcgggggg ggggtttggt 60
ggaaattt 68

<210> 151
<211> 421
<212> DNA
<213> Homo sapien

<400> 151
aggtgacacg tattcgggat gaaagtataa tagtcattcc ttcaaccctt gcatttatgg 60
actctggaaa tcgaagatcc acagtgagta aagatgttcg tccaaagaca aaaaatagaa 120
acagctcaac aaagcgagag acaaaaaaac aaaatggcac tgtggctctg cctttgaagt 180
ctgggctcca gcagagggct gatcttccca caggagacga gacggcctat gacactctcc 240
agaactgttg tcagtgccga attttacttc ccttgcccat tctaaatgag caccaggaga 300
agtgccagag gttagctcac caaaagaaac tccagtgggg ctggtgagat ggctcagcgg 360
gtaagagcac ccgactgctc ttccgaaggt ccggagttca aatcccagca accacatggt 420
g 421

<210> 152
<211> 507
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G

<400> 152
gaattcggca cnagctcgtg ccgccagggt nggtccnttt tttgctccgc ctcgccanga 60
cttcctacag ctatcgccag tcgtcggcca cgtcntcctt cngaggcctg ggcggcggct 120
ccgtgcgttn tgggccgggg gtcgcctttc nctcncccag cattcacggg ggctccggcg 180
gccgcggcgt atccgtgtcc tccgcccgct ntgtgtcctc gtcctcctcn ggggcctacg 240
gctngctgct acngcggctt cctgaccgct tccnacgggc tgctggcngg caacgagaag 300
ctaaccatgc agaacctnaa cnaccgcctg gcctcctacc tgnacaaggt gcgcnccctg 360
taggcggcca acggcnagct agaggtgaag atccnctact gggtaccaga agcaggggcc 420
tgggccctgc ccgactacag ccactnctnc acnaccatgc agtacctgcn ggganaagat 480
tntngggngc caccatngag aactgca 507

<210> 153
<211> 513
<212> DNA
<213> Homo sapien

<400> 153
gaattcggca cgaggtggct cagatgtcca ctactgggag tatggtcgaa ttgggaattt 60
tattgtgaaa aagcccatgg tgctgggaca tgaagcttcg ggaacagtcg aaaaagtggg 120
atcatcggta aagcactaa aaccaggtga tcgtgttgcc atcgagcctg gtgctccccg 180
agaaaatgat gaattctgca agatgggccg atacaatctg tcaccttcca tcttcttctg 240
tgccgcgccc cccgatgacg ggaacctctg ccggttctat aagcacaatg cagccttttg 300
ttacaagctt cctgacaatg tcacctttga ggaaggcgcc ctgatcgagc cactttctgt 360
ggggatccat gcctgcagga gaggcggagt taccctggga cacaaggtcc ttgtgtgtgg 420
agctgggcca atcgggatgg tcactttgct cgtggccaaa gcaatgggag cagctcaagt 480
agtggtgact gatctgtctg ctacccgatt gtc 513

<210> 154
<211> 507
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G

<400> 154
ggcacgagct cgtgccgaat tcggcncgag cagacacaat ggtaagaatg gtgcctgtcc 60
tgctgtctct gctgctgctt ctgggtcctg ctgtccccca ggagaaccaa gatggtcgtt 120
actctctgac ctatatctac actgggctgt ccaagcatgt tgaagacgtc cccgcgtttc 180
aggcccttgg ctcactcaat gacctccagt tctttagata caacagtaaa gacaggaagt 240
ctcagcccat gggactctgg agacaggtgg aaggaatgga ggattggaag caggacagcc 300
aacttcagaa ggccagggag gacatcttta tggagaccct gaaagacatc gtggagtatt 360
acaacgacag taacgggtct cacgtattgc agggaaggtt tggttgtgag atcgagaata 420
acagaagcag cggagcattc tggaaatatt actatgatgg aaaggactac attgaattca 480
acaaagaaat cccagcctgg gtcccct 507

<210> 155
<211> 507
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G

<400> 155
ggcacgagga gacctaaggg ctgagtntcg ggaacaggag aaagctctgt tggccctcca 60
gcagcagtgt gctgagcagg cacaggagca tgaggtggag accagggccc tgcaggacag 120
ctggctgcag gcccaggcag tgctcaagga acgggaccag gagctggaag ctctgcgggc 180
agaaagtcag tcctcccggc atcaggagga ggctgcccgg gcccgggctg aggctctgca 240
ggaggccctt ggcaaggctc atgctgccct gcaggggaaa gagcagcatc tcctcgagca 300
ggcagaattg agccgcagtc tggaggccag cactgcaacc ctgcaagcct ccctggatgc 360
ctgccaggca cacagtcggc agctggagga ggctctgagg atacaagaag gtgagatcca 420
ggaccaggat ctccgatacc aggaggatgt gcagcagctg cagcaggcac ttgcccagag 480
ggatgaagag ctgagacatc agcagga 507

<210> 156
<211> 509
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(509)
<223> n = A,T,C or G

<400> 156
ggcacgagga cagagagaac cctgtngaaa gagcgttacc aggaggtcct ggacaaacag 60
aggcaagtgg agaatcagct ccaagtgcaa ttaaagcagc ttcagcaaag gagagaagag 120
gaaatgaaga atcaccagga gatattaaag gctattcagg atgtgacaat aaagcgggaa 180
gaaacaaaga agaagataga gaaagagaag aaggagtttt tgcagaagga gcaggatctg 240
aaagctgaaa ttgagaagct ttgtgagaag ggcagaagag aggtgtggga aatggaactg 300
gatagactca agaatcagga tggcgaaata aataggaaca ttatggaaga gactgaacgg 360
gcctggaagg cagagatctt atcactagag agccggaaag agttactggt actgaaacta 420
gaagaagcag aaaaagaggc agaattgcac cttacttacc tcaagtcaac tcccccaaca 480
ctggagacag ttcgttccaa acaggagtg 509

<210> 157
<211> 507
<212> DNA
<213> Homo sapien

<400> 157

```
ggcacgaggg cagccctcct accggcgcac gtggtgccgc cgctgctgcc tcccgctcgc     60
cctgaaccca gtgcctgcag ccatggctcc cggccagctc gccttattta gtgtctctga    120
caaaaccggc cttgtggaat ttgcaagaaa cctgaccgct cttggtttga atctggtcgc    180
ttccggaggg actgcaaaag ctctcaggga tgctggtctg gcagtcagag atgtctctga    240
gttgacggga tttcctgaaa tgttgggggg acgtgtgaaa actttgcatc ctgcagtcca    300
tgctggaatc ctagctcgta atattccaga agataatgct gacatggcca gacttgattt    360
caatcttata agagttgttg cctgcaatct ctatcccttt gtaaagacag tggcttctcc    420
aggtgtaagt gttgaggagg ctgtggagca aattgacatt ggtggagtaa ccttactgag    480
agctgcagcc aaaaaccacg ctcgagt                                        507
```

<210> 158
<211> 507
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G

<400> 158

```
ggcacgagtc gagctgtgcc tattcgngtc aatccaagag tgagtaatgt gaagtctgtc     60
tacaaaaccc acattgatgt cattcattat cggaaaacgg atgcaaaacg tctgcatggc    120
cttgatgaag aagcagaaca gaaacttttt tcagagaaac gtgtggaatt gcttaaggaa    180
ctttccagga aaccagacat ttatgagagg cttgcttcag ccttggctcc aagcatttat    240
gaacatgaag atataaagaa gggaattttg cttcagctct ttggcgggac aaggaaggat    300
tttagtcaca ctggaagggg caaatttcgg gctgagatca acatcttgct gtgtggcgac    360
cctggtacca gcaagtccca gctgctgcag tacgtgtaca acctcgtccc caggggccag    420
tacacgtntg ggaagggctc cagtgcannt ggcctnactg cntacgtaat gaaagaccct    480
gagacaaggn anctggnnct gnnacag                                        507
```

<210> 159
<211> 508
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(508)
<223> n = A,T,C or G

<400> 159

```
ggcacnanaa accaggatta tggtnnggat ccaaagattg ctaatgcaat aatgaaggca     60
gcagatgagg tagctgaagg taaattaaat gatcattttc ctctcgtggt atggcagact    120
ggatcaggaa ctcagacaaa tatgaatgta aatgaagtca ttagcaatag agcaattgaa    180
atgttaggag gtgaacttgg cagcaagata cctgtgcatc ccaacgatca tgttaataaa    240
agccagagct caaatgatac ttttcccaca gcaatgcaca ttgctgctgc aatagaagtt    300
catgaagtac tgttaccagg actacagaag ttacatgatg ctcttgatgc aaaatccaaa    360
gagtttgcac agatcatcaa gattggacgt actcatactc aggatgctgt tccacttact    420
cttgggcagg aatttagtgg ttatgttcaa caagtaaaat atgcaatgac aagaataaaa    480
gctgccatgc caagaatcta tgagctcg                                       508
```

<210> 160
<211> 508
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(508)
<223> n = A,T,C or G

<400> 160
ggcacgagct tggagcaaag tcatctnaag gaattagagg acacacttca ggttaggcac 60
atacaagagt ttgagaaggt tatgacagac cacagagttt ctttggagga attaaaaaag 120
gaaaaccaac aaataattaa tcaaatacaa gaatctcatg ctgaaattat ccaggaaaaa 180
gaaaaacagt tacaggaatt aaaactcaag gtttctgatt tgtcagacac gagatgcaag 240
ttagaggttg aacttgcgtt gaaggaagca gaaactgatg aaataaaaat tttgctggaa 300
gaaagcagag cccagcagaa ggagaccttg aaatctcttc ttgaacaaga gacagaaaat 360
ttgagaacag aaattagtaa actcaaccaa aagattcagg ataataatga aaattatcag 420
gtgggcttag cagagctaag aactttaatg acaattgaaa aagatcagtg tatttccgag 480
ttaattagta gacatgaaga agaatcta 508

<210> 161
<211> 507
<212> DNA
<213> Homo sapien

<400> 161
ggcacgagcg ctaccggcgc ctcctctgcg gccactgagc cggagccggc ctgagcagcg 60
ctctcggttg cagtacccac tggaaggact taggcgctcg cgtggacacc gcaagcccct 120
cagtagcctc ggcccaagag gcctgctttc cactcgctag ccccgccggg ggtccgtgtc 180
ctgtctcggt ggccggaccc gggcccgagc ccgagcagta gccggcgcca tgtcggtggt 240
gggcatagac ctgggcttcc agagctgcta cgtcgctgtg gcccgcgccg gcggcatcga 300
gactatcgct aatgagtata gcgaccgctg cacgccggct tgcatttctt ttggtcctaa 360
gaatcgttca attggagcag cagctaaaag ccaggtaatt tctaatgcaa agaacacagt 420
ccaaggattt aaaagattcc atggccgagc attctctgat ccatttgtgg aggcagaaaa 480
atctaacctt gcatatgata ttgtgca 507

<210> 162
<211> 507
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G

<400> 162
ggcacgagca gctgtgcacc gacatgntct cagtgtcctg agtaagacca aagaagctgg 60
caagatcctc tctaataatc ccagcaaggg actggccctg ggaattgcca aagcctggga 120
gctctacggc tcacccaatg ctctggtgct actgattgct caagagaagg aaagaaacat 180
atttgaccag cgtgccatag agaatgagct actggccagg aacatccatg tgatccgacg 240
aacatttgaa gatatctctg aaaaggggtc tctggaccaa gaccgaaggc tgtttgtgga 300
tggccaggaa attgctgtgg tttacttccg ggatggctac atgcctcgtc agtacagtct 360
acagaattgg gaagcacgtc tactgctgga gaggtcacat gctgccaagt gcccagacat 420
tgccacccag ctggctggga ctaagaaggt gcagcaggag ctaagcaggc cgggcatgct 480
ggagatgttg ctccctggcc agcctga 507

<210> 163
<211> 460
<212> DNA
<213> Homo sapien

<400> 163
ggcacgagaa ataactttat ttcattgtgg gtcgcggttc ttgtttgtgg atcgctgtga 60
tcgtcacttg acaatgcaga tcttcgtgaa gactctgact ggtaagacca tcaccctcga 120
ggttgagccc agtgacacca tcgagaatgt caaggcaaag atccaagata aggaaggcat 180
ccctcctgac cagcagaggc tgatctttgc tggaaaacag ctggaagatg ggcgcaccct 240
gtctgactac aacatccaga aagagtccac cctgcacctg gtgctccgtc tcagaggtgg 300
gatgcaaatc ttcgtgaaga cactcactgg caagaccatc acccttgagg tggagcccag 360
tgacaccatc gagaacgtca aagcaaagat ccaggacaag gaaggcattc ctcctgacca 420
gcagaggttg atctttgccg gaaagcagct ggaagatggg 460

<210> 164
<211> 462
<212> DNA
<213> Homo sapien

<400> 164
ggcacgagcc ggatctcatt gccacgcgcc cccgacgacc gcccgacgtg cattcccgat 60
tcctttggt tccaagtcca atatggcaac tctaaaggat cagctgattt ataatcttct 120
aaaggaagaa cagaccccc agaataagat tacagttgtt ggggttggtg ctgttggcat 180
ggcctgtgcc atcagtatct taatgaagga cttggcagat gaacttgctc ttgttgatgt 240
catcgaagac aaattgaagg gagagatgat ggatctccaa catggcagcc ttttccttag 300
aacaccaaag attgtctctg gcaaagacta taatgtaact gcaaactcca agctggtcat 360
tatcacggct ggggcacgtc agcaagaggg agaaagccgt cttaatttgg tccagcgtaa 420
cgtgaacatc tttaaattca tcattcctaa tgttgtaaaa ta 462

<210> 165
<211> 462
<212> DNA
<213> Homo sapien

<400> 165
ggcacgagga agccatgagc agcaaagtct ctcgcgacac cctgtacgag gcggtgcggg 60
aagtcctgca cgggaaccag cgcaagcgcc gcaagttcct ggagacggtg gagttgcaga 120
tcagcttgaa gaactatgat ccccagaagg acaagcgctt ctcgggcacc gtcaggctta 180
agtccactcc ccgccctaag ttctctgtgt gtgtcctggg ggaccagcag cactgtgacg 240
aggctaaggc cgtggatatc cccacatgg acatcgaggc gctgaaaaaa ctcaacaaga 300
ataaaaaact ggtcaagaag ctggccaaga agtatgatgc gtttttggcc tcagagtctc 360
tgatcaagca gattccacga atcctcggcc caggtttaaa taaggcagga aagttccctt 420
ccctgctcac acacaacgaa aacatggtgg ccaaagtgga tg 462

<210> 166
<211> 459
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(459)
<223> n = A,T,C or G

<400> 166
ggcacgagag ggacctgtnt gaatggntcc actagggttn anntgnctct tacttttaac 60
cantnaaatn gacctgcccg tgaanangcg ggcntgacac annaanacga gaagacccta 120
tggagcttta atttattaat gcanacagna cctaacaaac ccacangtcc taaactacca 180
agcctgcatt aaaaatttcg gntggggcna cctcnnagca naacccaacc tccgagcaac 240
tcatgctaag acttcaccag tcaaagctga actactatac tcaattgatc caataacttg 300
accaacagan caagntaccc tagggataac ancacaatcc tattctagac cccttatnac 360
caatangntt tacacctcna tngnggaacc aggacatccg atggggcagn cgttattaaa 420

gttngttgnt aacnataaag tctacgtgat ctgagttag 459

<210> 167
<211> 464
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(464)
<223> n = A,T,C or G

<400> 167
gaattgggac caacganaan cntgcggntc ttnttttgcn tccanngccc agctnattgc 60
tcagacacac atggggaagg tnaaggtcgg gagtcaacng atttggtngt attgnagcgt 120
ttggtcacca gngctgcttt taactctggn aaagtggata ttgttgtcat naatgacccc 180
tncattgacc tnaactacat ggtttacatg ttccaatatg attccaccca tggcaaattc 240
catngcaccg tnaaggctga gaacgggaag cttgtnatca atggaaatcc catcaccatc 300
tttcangaac ganatccntn caaaaatcaa anttgggggc gatgcttggc cncttgaagt 360
accgttcaan gggaannncc ccactttggc cgntntttnc aancccaccc caatttgggn 420
aaaaaaaaag gggnntttgg ggggggcct tttanntttt tttt 464

<210> 168
<211> 462
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(462)
<223> n = A,T,C or G

<400> 168
ggcacgaggn nnaacctncg gggctggggc agcacgcctt gngcaancct gcactgcact 60
gaagacccgg tgccggaagc cgnnggcngc nacatgcagn aactgaacca gctgggcgcg 120
cancagttct cagacctgac agaggtgctt ttacacttcc taactgatcc anantangtg 180
gaaatattnt tngttnatnt catntgaatn atccancncc aatcatanca nntttnattn 240
cctcataanc nttgagaana gcnnccttnt gnttncanan ggtgctntga anangagtct 300
cacangcaan caggtccaag cggatttnnt aactntgggt cttantgang agaaagncac 360
ttacttttct gaaancngga agcagaatgc tcccaccctt gctcgatggg ccatacgtca 420
agactctgat gattaaccag ctttanatat ggacnggaaa tt 462

<210> 169
<211> 460
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(460)
<223> n = A,T,C or G

<400> 169
ggcacgaggg acagcagacn agacagtcac agcagccttg acaaaacgtt cctggaactc 60
aagntcttnt ncncaaagga ggacagagca nacagcagag accatggant ctncctcggc 120
ccctccccac agatggtgca tcccctggca naggctcctg ctcacagcct cacttctaac 180
cttctggaac ccgcccacca ctgccaagct cactattgaa tccacgccgt tcaatgnntc 240
ntaggggaag gaggngcttt ctactnttnc acaatctgan ccccttcttn tttggttact 300

ancatggctc tncatgtnaa aatactggna tggntaacct gtcaaattta taggnantnt 360
gctaattggg aaactnccnn tngtctaccc caggggnccc agattcctnn gttcncataa 420
cnattaattt aacccctaat gncaanccct tngttaaaga 460

<210> 170
<211> 508
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(508)
<223> n = A,T,C or G

<400> 170
ggcacgaggg ggatttttag gtggtcnggt gtggtatcag gaataatgtg ggaggccaga 60
ttgaagtcca ggccaggaac aatggtaatt gtgggactta agaaagtgtg agtacagctg 120
aatgagccgg ggagcagaaa gtatatgcgt caggtatgag gaagaaaata gattttggaa 180
gttatgagaa atgtagagag tgagttgagc atagtttgtg attttgaggg cctctaacag 240
tattaaagca gcggcagcgg ctgcacacag acatgatggc taggctaaaa caggaaggtc 300
aagttgtttg gacagaaagg ctacagggtg cagtcctggc tcttgtgtaa gaattctgac 360
cacactaacc atgcctagga aggaaaggag ttgttctttt gtaagggatt gaggtttggg 420
agattaatcg gacacgatca gcagggagag cacctgtgtt tttatgagaa ttatgctgag 480
ataggtaaca gatgaggatg aaatttgg 508

<210> 171
<211> 507
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G

<400> 171
ggcacgagac cagccactag cgcagnctcg agcgatggcc tatgtccccg caccgggcta 60
ccagcccacc tacaacccga cgctgcctta ctaccagccc atcccgggcg ggctcaacgt 120
gggaatgtct gtttacatcc aaggagtggc cagcgagcac atgaagcggt tcttcgtgaa 180
ctttgtggtt gggcaggatc cgggctcaga cgtcgccttc cacttcaatc cgcggtttga 240
cggctgggac aaggtggtct tcaacacgtt gcagggcggg aagtggggca gcgaggagag 300
gaagaggagc atgcccttca aaaagggtgc cgcctttgag ctggtcttca tagtcctggc 360
tgagcactac aaggtggtgg taaatggaaa tcccttctat gagtacgggc accggcttcc 420
cctacagatg gtcacccacc tgcaagtgga tggggatctg caacttcaat caatcaactt 480
catcggaggc cagcccctcc ggcccca 507

<210> 172
<211> 409
<212> DNA
<213> Homo sapien

<400> 172
ggcacgagct ggagtgtctg ctgccacccc ctcgtcctct gcagaaatgt ctgtcaccta 60
cgatgactct gtgggagtgg aagtgtccag cgacagcttc tgggaggttg ggaactacaa 120
acggactgtg aagcggattg acgatggcca ccgcctgtgt ggtgacctca tgaactgtct 180
gcatgagcgg gcacgcatcg agaaggcgta tgcacagcag ctcactgagt gggcccgacg 240
ctggaggcag ctggtagaga agggaccaca gtatgggacc gtggagaagg cctggatagc 300
tgtcatgtct gaagcagaga gggtgagtga actgcacctg gaagtgaagg catcactgat 360

gaatgaagac tttgagaaga tcaagaactg gcagaaggaa gcctttcac 409

<210> 173
<211> 409
<212> DNA
<213> Homo sapien

<400> 173
ggcacgaggg cagctagagg aagagtccaa ggccaagaac gcactggccc acgccctgca 60
gtcagctcgc catgactgtg acctgctgcg ggaacagtat gaagaggagc aggaagccaa 120
ggctgagctg cagagggcca tgtccaaggc caacagcgag gtagcccagt ggaggacgaa 180
atatgagacg gatgccatcc agcgcacaga ggagctggaa gaggccaaga agaagctggc 240
tcagcgtctg caggatgctg aggaacatgt agaagctgtg aattccaaat gcgcttctct 300
tgaaaagacg aagcagcgac ttcagaatga agtggaggac ctcatgattg acgtggagag 360
gtctaatgct gcctgcgctg cgcttgataa gaagcagagg aactttgac 409

<210> 174
<211> 407
<212> DNA
<213> Homo sapien

<400> 174
ggcacgagcc ggggcggggc gcggcgctcc ggctcgaggc attcggagct gcgggagccg 60
ggctggcagg agcaggatgg cggcggcggc ggctgcaggc gaggcgcgcc gggtgctggt 120
gtacggcggc aggggcgctc tgggttctcg atgcgtgcag gcttttcggg cccgcaactg 180
gtgggttgcc agcgttgatg tggtggagaa tgaagaggcc agcgctagca tcattgttaa 240
aatgacagac tcgttcactg agcaggctga ccaggtgact gctgaggttg gaaagctctt 300
gggtgaagag aaggtggatg caattctttg cgttgctgga ggatgggccg gggcaatgc 360
caaatccaag tctctcttta agaactgtga cctgatgtgg aagcaga 407

<210> 175
<211> 407
<212> DNA
<213> Homo sapien

<400> 175
ggcacgagct tgcccgtcgg tcgctagctc gctcggtgcg cgtcgtcccg ctccatggcg 60
ctcttcgtgc ggctgctggc tctcgccctg gctctggccc tgggccccgc cgcgaccctg 120
gcgggtcccg ccaagtcgcc ctaccagctg gtgctgcagc acagcaggct ccggggccgc 180
cagcacggcc ccaacgtgtg tgctgtgcag aaggttattg gcactaatag gaagtacttc 240
accaactgca agcagtggta ccaaaggaaa atctgtggca aatcaacagt catcagctac 300
gagtgctgtc ctggatatga aaaggtccct ggggagaagg gctgtccagc agccctacca 360
ctctcaaacc tttacgagac cctgggagtc gttggatcca ccaccac 407

<210> 176
<211> 409
<212> DNA
<213> Homo sapien

<400> 176
ggcacgagtg gtgccaaaac gggaccatgc cctcctggag gagcagagca agcagcagtc 60
caacgagcac ctgcgccgcc agttcgccag ccaggccaat gttgtggggc cctggatcca 120
gaccaagatg gaggagatcg ggcgcatctc cattgagatg aacgggaccc tggaggacca 180
gctgagccac ctgaagcagt atgaacgcag catcgtggac tacaagccca acctggacct 240
gctggagcag cagcaccagc tcatccagga ggccctcatc ttcgacaaca agcacaccaa 300
ctataccatg gagcacatcc gcgtgggctg ggagcagctg ctcaccacca ttgcccgcac 360
catcaacgag gtggagaacc agatcctcac ccgcgacgcc aagggcatc 409

<210> 177
<211> 408
<212> DNA
<213> Homo sapien

<400> 177
ggcacgaggt ccaggtaact gcaaaaacaa tggctcagca tgaagaactg atgaagaaaa 60
ctgaaacaat gaatgtagtt atggagacca ataaaatgct aagagaagag aaggagcagg 120
tttcaaaaat ggcatcagtc cgtcagcatt tggaagaaac aacacagaaa gcagaatcac 180
agttgttgga gtgtaaagca tcttgggagg aaagagagag aatgttaaag gatgaagttt 240
ccaaatgtgt atgtcgctgt gaagatctgg agaaacaaaa cagattactt catgatcaga 300
tcgaaaaatt aagtgacaag gtcgttgcct ctgtgaagga aggtgtacaa ggtccactga 360
atgtatctct cagtgaagaa ggaaaatctc aagaacaaat tttggaaa 408

<210> 178
<211> 92
<212> DNA
<213> Homo sapien

<400> 178
ggcacgagaa gaaattaaga gctaaagaca aggagaatga aaatatggtt gcaaagctga 60
acaaaaaagt taaagagcta gaagaggaga tg 92

<210> 179
<211> 411
<212> DNA
<213> Homo sapien

<400> 179
ggcacgagga gacacgccac ctataccaca gttctcagaa tgaattagct aagttggaat 60
cagaacttaa gagtctcaaa gaccagttga ctgatttaag taactcttta gaaaaatgta 120
aggaacaaaa aggaaacttg gaagggatca taaggcagca agaggctgat attcaaaatt 180
ctaagttcag ttatgaacaa ctggagactg atcttcaggc ctccagagaa ctgaccagta 240
ggctgcatga agaaataaat atgaaagagc aaaagattat aagcctgctt tctggcaagg 300
aagaggcaat ccaagtagct attgctgaac tgcgtcagca acatgataaa gaaattaaag 360
agctggaaaa cctgctgtcc caggaggaag aggagaatat tgttttagaa g 411

<210> 180
<211> 411
<212> DNA
<213> Homo sapien

<400> 180
ggcacgaggt tgttcggagc gggcgagcgg agttagcagg gctttactgc agagcgcgcc 60
gggcactcca gcgaccgtgg ggatcagcgt aggtgagctg tggccttttg cgaggtgctg 120
cagccatagc tacgtgcgtt cgctacgagg attgagcgtc tccacccatc ttctgtgctt 180
caccatctac ataatgaatc ccagtatgaa gcagaaacaa gaagaaatca aagagaatat 240
aaagactagt tctgtcccaa gaagaactct gaagatgatt cagccttctg catctggatc 300
tcttgttgga agagaaaatg agctgtccgc aggcttgtcc aaaaggaaac atcggaatga 360
ccacttaaca tctacaactt ccagccctgg ggttattgtc ccagaatcta g 411

<210> 181
<211> 411
<212> DNA
<213> Homo sapien

<400> 181
ggcacgaggc gggacagggc gaagcggcct gcgcccacgg agcgcgcgac actgcccgga 60

agggaccgcc acccttgccc cctcagctgc ccactcgtga tttccagcgg cctccgcgcg 120
cgcacgatgc cctcggccac cagccacagc gggagcggca gcaagtcgtc cggaccgcca 180
ccgccgtcgg gttcctccgg gagtgaggcg gccgcgggag ccggggccgc cgcgccggct 240
tctcagcacc ccgcaaccgg caccggcgct gtccagaccg aggccatgaa gcagattctc 300
ggggtgatcg acaagaaact tcggaacctg gagaagaaaa agggtaagct tgatgattac 360
caggaacgaa tgaacaaagg ggaaaggctt aatcaagatc agctggatgc c 411

<210> 182
<211> 411
<212> DNA
<213> Homo sapien

<400> 182
ggcacgagcc gacatggagc tgttcctcgc gggccgccgg gtgctggtca ccggggcagg 60
caaaggtata gggcgcggca cggtccaggc gctgcacgcg acgggcgcgc gggtggtggc 120
tgtgagccgg actcaggcgg atcttgacag ccttgtccgc gagtgccccgg ggatagaacc 180
cgtgtgcgtg gacctgggtg actgggaggc caccgagcgg gcgctgggca gcgtgggccc 240
cgtggacctg ctggtgaaca acgccgctgt cgccctgctg cagcccttcc tggaggtcac 300
caaggaggcc tttgacagat cctttgaggt gaacctgcgt gcggtcatcc aggtgtcgca 360
gattgtggcc aggggcttaa tagcccgggg agtcccaggg gccatcgtga a 411

<210> 183
<211> 409
<212> DNA
<213> Homo sapien

<400> 183
ggcacgagcc tacactctgg ccagagatac cacagtcaaa cctggagcca aaaaggacac 60
aaaggactct cgacccaaac tgccccagac cctctccaga ggttggggtg accaactcat 120
ctggactcag acatatgaag aagctctata taaatccaag acaagcaaca aaccccttgat 180
gattattcat cacttggatg agtgcccaca cagtcaagct ttaaagaaag tgtttgctga 240
aaataaagaa atccagaaat tggcagagca gtttgtcctc ctcaatctgg tttatgaaac 300
aactgacaaa cacctttctc ctgatggcca gtatgtcccc aggattatgt ttgttgaccc 360
atctctgaca gttagagccg atatcactgg aagatattca aatcgtctc 409

<210> 184
<211> 410
<212> DNA
<213> Homo sapien

<400> 184
ggcacgaggt cattccagca ccaacaggat ccaagccaga ttgattgggc tgcattggcc 60
caagcttgga ttgcccaaag agaagcttca ggacagcaaa gcatggtaga acaaccacca 120
ggaatgatgc caaatggaca agatatgtct acaatggaat ctggtccaaa caatcatggg 180
aatttccaag ggggattcaaa cttcaacaga atgtggcaac cagaatgggg aatgcatcag 240
caaccccccac accccccctcc agatcagcca tggatgccac caacaccagg cccaatggac 300
attgttcctc cttctgaaga cagcaacagt caggacagtg ggaatttgc ccctgacaac 360
aggcatatat ttaaccagaa caatcacaac tttggtggac cacccgataa 410

<210> 185
<211> 411
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(411)
<223> n = A,T,C or G

<400> 185
ggcacgagca cagatgtagt tttctctgcg cgtgtgcgtt ttccctcctc ccccgccctc 60
agggtccacg gccaccatgg cgtattaggg gcagcagtgc ctgcggcagc attggccttt 120
gcagcggcgg cagcagcacc aggctctgca gcggcaaccc ccagcggctt aagccatggc 180
gcttctcacg gcattcagca gcagcgttgc tgtaaccgac aaagacacct tcgaattaag 240
cacattcctc gattccagca aagcaccgca acatgaccga aatgagcttc ctgagcagcg 300
aggtgttggt gggggacttg atgtccccct tcgacccgtc gggtttgggg gctgaagaaa 360
gcctangtct cttagatgat tacctggagg tggccaagca cttcaaacct c 411

<210> 186
<211> 410
<212> DNA
<213> Homo sapien

<400> 186
ggcacgagct tctagtcccg ccatggccgc tctcacccgg gacccccagt tccagaagct 60
gcagcaatgg taccgcgagc accgctccga gctgaacctg cgccgcctct tcgatgccaa 120
caaggaccgc ttcaaccact tcagcttgac cctcaacacc aaccatgggc atatcctggt 180
ggattactcc aagaacctgg tgacggagga cgtgatgcgg atgctggtgg acttggccaa 240
gtccaggggc gtggaggccg cccgggagcg gatgttcaat ggtgagaaga tcaactacac 300
cgagggtcga gccgtgctgc acgtggctct gcggaaccgg tcaaacacac ccatcctggt 360
agacggcaag gatgtgatgc cagaggtcaa caaggttctg gacaagatga 410

<210> 187
<211> 506
<212> DNA
<213> Homo sapien

<400> 187
ctttcgtggc tcactccctt tcctctgctg ccgctcggtc acgcttgtgc ccgaaggagg 60
aaacagtgac agacctggag actgcagttc tctatccttc acacagctct ttcaccatgc 120
ctggatcact tcctttgaat gcagaagctt gctggccaaa agatgtggga attgttgccc 180
ttgagatcta ttttccttct caatatgttg atcaagcaga gttggaaaaa tatgatggtg 240
tagatgctgg aaagtatacc attggcttgg gccaggccaa gatgggcttc tgcacagata 300
gagaagatat taactctctt tgcatgactg tggttcagaa tcttatggag agaaataacc 360
tttcctatga ttgcattggg cggctggaag ttggaacaga gacaatcatc gacaaatcaa 420
agtctgtgaa gactaatttg atgcagctgt ttgaagagtc tgggaataca gatatagaag 480
gaatcgacac aactaatgca tgctat 506

<210> 188
<211> 506
<212> DNA
<213> Homo sapien

<400> 188
gccacagagg cggcggagag atggccttca gcggttccca ggctccctac ctgagtccag 60
ctgtcccctt ttctgggact attcaaggag gtctccagga cggacttcag atcactgtca 120
atgggaccgt tctcagctcc agtggaacca ggtttgctgt gaactttcag actggcttca 180
gtggaaatga cattgccttc cacttcaacc ctcggtttga agatggaggg tacgtggtgt 240
gcaacacgag gcagaacgga agctggggggc ccgaggagag gaagacacac atgcctttcc 300
agaaggggat gccctttgac ctctgcttcc tggtgcagag ctcagatttc aaggtgatgg 360
tgaacgggat cctcttcgtg cagtacttcc accgcgtgcc cttccaccgt gtggacacca 420
tctccgtcaa tggctctgtg cagctgtcct acatcagctt ccagcctccc ggcgtgtggc 480
ctgccaaccc ggctcccatt acccag 506

<210> 189
<211> 399

<212> DNA
<213> Homo sapien

<400> 189
ctggacagga gaagagcctg gctgctgaag gcagggctga cacgaccacg ggcagcattg 60
ctggagcccc agaggatgaa agatcgcaga gcacagcccc ccaggcacca gagtgcttcg 120
accctgccgg accggctggg ctcgtgaggc cgacatctgg cctttcccag ggcccaggaa 180
aggaaacctt ggaaagtgct ctaatcgctc tagactctga aaaacccaag aaacttcgct 240
tccacccaaa gcagctgtac ttctctgcca ggcagggtga gctgcagaag gtgcttctca 300
tgctggttga tggaattgat cccaacttca aaatggagca ccaaagtaag cgttccccat 360
tacatgctgc tgcggaggct ggccacgtgg acatctgcc 399

<210> 190
<211> 401
<212> DNA
<213> Homo sapien

<400> 190
cggcgacggt ggtggtgact gagcggagcc cggtgacagg atgttggtgt tggtattagg 60
agatctgcac atcccacacc ggtgcaacag tttgccagct aaattcaaaa aactcctggt 120
gccaggaaaa attcagcaca ttctctgcac aggaaacctt tgcaccaaag agagttatga 180
ctatctcaag actctggctg gtgatgttca tattgtgaga ggagacttcg atgagaatct 240
gaattatcca gaacagaaag ttgtgactgt tggacagttc aaaattggtc tgatccatgg 300
acatcaagtt attccatggg gagatatggc cagcttagcc ctgttgcaga ggcaatttga 360
tgtggacatt cttatctcgg gacacacaca caaatttgaa g 401

<210> 191
<211> 406
<212> DNA
<213> Homo sapien

<400> 191
tggcagccta agccgtggga gggttccagt cgagaatggg aagatgaaag acttcagatg 60
gaacagaaat aaatgccttt tttgacaaac gcagcagtgc gtgcctctag cttgcaagag 120
cgttactccc cttcatagct ttaaaaggtt ttcgcactgc gtgcagttag agtagctaaa 180
tcttgtgtga cgctccacaa acacttgtaa gaattttgca gagaaagata accgttgcca 240
cccaatgccc cccacaggca ttctactccc cagtacctct tagggtggga gaaatggtga 300
agagttgttc ctacaacttg ctaacctagt ggacagggta gtagattagc atcatccgga 360
tagatgtgaa gaggacggct gtttggataa taattaagga taaaat 406

<210> 192
<211> 316
<212> DNA
<213> Homo sapien

<400> 192
cccggggagg ccctggtcat aaaactttaa atttactag tgttacttaa tgtatattct 60
aaaaagagaa tgcagtaact aatgccctaa atgtttgatc tctgtttgtc attacttttt 120
caaaattatt tttttctgta aagtataata tataaaactt cttgcttaaa ttgaatttct 180
atattagtgg ttaattgcag tttattaaag ggatcattat cagtaatttc atagcaactg 240
ttctagtgtt ttgtgttttt aaaacagaat taggaatttg agatatctga ttatattttt 300
catatgaatc acagac 316

<210> 193
<211> 146
<212> DNA
<213> Homo sapien

<400> 193
gaaacatgga ctgcccctta aattttgact gtcctaaaaa cctatttctg atttataata 60
tgctgcctga taaagtgaca ctagatgtac cagctgagtg tttaatcttc ccatcacaga 120
tcagatttga gcattaacag gtattt 146

<210> 194
<211> 405
<212> DNA
<213> Homo sapien

<400> 194
cggatgtgct cactgacatt ctactccaag tcggagatgc agatccactc caagtcacac 60
accgagacca agccccacaa gtgcccacat tgctccaaga ccttcgccaa cagctcctac 120
ctggcccagc acatccgtat acactcaggg gctaagccct acagttgtaa cttctgtgag 180
aaatccttcc gccagctctc ccaccttcag cagcacaccc gaatccacac tggtgataga 240
ccatacaaat gtgcacaccc aggctgtgag aaagccttca cacaactctc caatctgcag 300
tcccacagac ggcaacacaa caaagataaa cccttcaagt gccacaactg tcatcgggcg 360
tacacggatg cagcctcact agaggtgcac ctgtctacgc acaca 405

<210> 195
<211> 421
<212> DNA
<213> Homo sapien

<400> 195
agaattcggc acgagctact ccttgcgcgc tggcactccg cagcctttaa ggttcgcgcg 60
ggggccaggc aagagttagc catgaagagc ctcaagtccc gcctgaggag gcaggacgtg 120
cccggccccg cgtcgtctgg cgccgccgcc gccagcgcgc atgcagcaga ttggaataaa 180
tatgatgacc gattgatgaa agcagcagaa agggggggatg tagaaaaagt gacgtcaatc 240
cttgctaaaa agggggtcaa tccaggcaaa ctagatgtgg aaggcagatc tgtcttccat 300
gttgtgacct caaaggggaa tcttgagtgt ttgaatgcca tccttataca tggagttgat 360
attacaacca gtgacactgc agggagaaat gctcttcacc tggctgctaa gtatggacat 420
g 421

<210> 196
<211> 476
<212> DNA
<213> Homo sapien

<400> 196
agaattgatc tatagattta atgcaatgcc tactaaaatc ccagtacgat tttttacagg 60
catagacaat agacatagcc aaaacttatt ctaaaataca tatgaagatg cacaggccct 120
agttatacaa tcttgacaaa gaagaataaa gtgggaagaa tctatttgat tttaaggctt 180
accatgtaac tacagtcatc aagagagtgt ggtatcggca gacggtcaga catacagatc 240
aatggaatgt aacagaggac ccagaaatag gcccacacag atatgctcaa tggatatttg 300
acaagcgtgc aaaacaattc aatggaagaa taagctttca aaaaaatggc gttggagcaa 360
ccggacatcc ataggaaaaa atgaacccat acctaaacca taaaccttat ataaaaataa 420
acacaaaatg aatcataggc ttaaatgtaa gctataaaac ttttagagaa aaacac 476

<210> 197
<211> 503
<212> DNA
<213> Homo sapien

<400> 197
tagccctcgg tgaagcccca gaccacagct atgagtccct tcgtgtgacg tctgcgcaga 60
aacatgttct gcatgtccag ctcaaccggc ccaacaagag gaatgccatg aacaaggtct 120
tctggagaga gatggtagag tgcttcaaca agatttcgag agacgctgac tgtcgggcgg 180

```
tggtgatctc tggtgcagga aaaatgttca ctgcaggtat tgacctgatg gacatggctt     240
cggacatcct gcagcccaaa ggagatgatg tggcccggat cagctggtac ctccgtgaca     300
tcatcactcg ataccaggag accttcaacg tcatcgagag gtgccccaag cccgtgattg     360
ctgccgtcca tgggggctgc attggcggag gtgtggacct tgtcaccgcc tgtgacatcc     420
ggtactgtgc ccaggatgct ttcttccagg tgaaggaggt ggacgtgggt ttggctgccc     480
atgtaggaac actgcagcgc ctg                                              503

      <210> 198
      <211> 168
      <212> PRT
      <213> Homo sapien

      <400> 198
Phe Val Ala His Ser Leu Ser Ser Ala Ala Ala Arg Ser Arg Leu Cys
 1               5                  10                  15
Pro Lys Glu Glu Thr Val Thr Asp Leu Glu Thr Ala Val Leu Tyr Pro
            20                  25                  30
Ser His Ser Ser Phe Thr Met Pro Gly Ser Leu Pro Leu Asn Ala Glu
        35                  40                  45
Ala Cys Trp Pro Lys Asp Val Gly Ile Val Ala Leu Glu Ile Tyr Phe
    50                  55                  60
Pro Ser Gln Tyr Val Asp Gln Ala Glu Leu Glu Lys Tyr Asp Gly Val
65                  70                  75                  80
Asp Ala Gly Lys Tyr Thr Ile Gly Leu Gly Gln Ala Lys Met Gly Phe
                85                  90                  95
Cys Thr Asp Arg Glu Asp Ile Asn Ser Leu Cys Met Thr Val Val Gln
            100                 105                 110
Asn Leu Met Glu Arg Asn Asn Leu Ser Tyr Asp Cys Ile Gly Arg Leu
        115                 120                 125
Glu Val Gly Thr Glu Thr Ile Ile Asp Lys Ser Lys Ser Val Lys Thr
    130                 135                 140
Asn Leu Met Gln Leu Phe Glu Glu Ser Gly Asn Thr Asp Ile Glu Gly
145                 150                 155                 160
Ile Asp Thr Thr Asn Ala Cys Tyr
                165

      <210> 199
      <211> 168
      <212> PRT
      <213> Homo sapien

      <400> 199
His Arg Gly Gly Gly Glu Met Ala Phe Ser Gly Ser Gln Ala Pro Tyr
 1               5                  10                  15
Leu Ser Pro Ala Val Pro Phe Ser Gly Thr Ile Gln Gly Gly Leu Gln
            20                  25                  30
Asp Gly Leu Gln Ile Thr Val Asn Gly Thr Val Leu Ser Ser Ser Gly
        35                  40                  45
Thr Arg Phe Ala Val Asn Phe Gln Thr Gly Phe Ser Gly Asn Asp Ile
    50                  55                  60
Ala Phe His Phe Asn Pro Arg Phe Glu Asp Gly Gly Tyr Val Val Cys
65                  70                  75                  80
Asn Thr Arg Gln Asn Gly Ser Trp Gly Pro Glu Glu Arg Lys Thr His
                85                  90                  95
Met Pro Phe Gln Lys Gly Met Pro Phe Asp Leu Cys Phe Leu Val Gln
            100                 105                 110
Ser Ser Asp Phe Lys Val Met Val Asn Gly Ile Leu Phe Val Gln Tyr
        115                 120                 125
```

```
Phe His Arg Val Pro Phe His Arg Val Asp Thr Ile Ser Val Asn Gly
    130                 135                 140
Ser Val Gln Leu Ser Tyr Ile Ser Phe Gln Pro Pro Gly Val Trp Pro
145                 150                 155                 160
Ala Asn Pro Ala Pro Ile Thr Gln
                165

      <210> 200
      <211> 132
      <212> PRT
      <213> Homo sapien

      <400> 200
Gly Gln Glu Lys Ser Leu Ala Ala Glu Gly Arg Ala Asp Thr Thr Thr
 1               5                  10                  15
Gly Ser Ile Ala Gly Ala Pro Glu Asp Glu Arg Ser Gln Ser Thr Ala
            20                  25                  30
Pro Gln Ala Pro Glu Cys Phe Asp Pro Ala Gly Pro Ala Gly Leu Val
        35                  40                  45
Arg Pro Thr Ser Gly Leu Ser Gln Gly Pro Gly Lys Glu Thr Leu Glu
    50                  55                  60
Ser Ala Leu Ile Ala Leu Asp Ser Glu Lys Pro Lys Lys Leu Arg Phe
65                  70                  75                  80
His Pro Lys Gln Leu Tyr Phe Ser Ala Arg Gln Gly Glu Leu Gln Lys
                85                  90                  95
Val Leu Leu Met Leu Val Asp Gly Ile Asp Pro Asn Phe Lys Met Glu
            100                 105                 110
His Gln Ser Lys Arg Ser Pro Leu His Ala Ala Ala Glu Ala Gly His
        115                 120                 125
Val Asp Ile Cys
    130

      <210> 201
      <211> 120
      <212> PRT
      <213> Homo sapien

      <400> 201
Met Leu Val Leu Val Leu Gly Asp Leu His Ile Pro His Arg Cys Asn
 1               5                  10                  15
Ser Leu Pro Ala Lys Phe Lys Lys Leu Leu Val Pro Gly Lys Ile Gln
            20                  25                  30
His Ile Leu Cys Thr Gly Asn Leu Cys Thr Lys Glu Ser Tyr Asp Tyr
        35                  40                  45
Leu Lys Thr Leu Ala Gly Asp Val His Ile Val Arg Gly Asp Phe Asp
    50                  55                  60
Glu Asn Leu Asn Tyr Pro Glu Gln Lys Val Val Thr Val Gly Gln Phe
65                  70                  75                  80
Lys Ile Gly Leu Ile His Gly His Gln Val Ile Pro Trp Gly Asp Met
                85                  90                  95
Ala Ser Leu Ala Leu Leu Gln Arg Gln Phe Asp Val Asp Ile Leu Ile
            100                 105                 110
Ser Gly His Thr His Lys Phe Glu
        115                 120

      <210> 202
      <211> 135
      <212> PRT
```

<213> Homo sapien

<400> 202

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Arg Met Cys Ser Leu Thr Phe Tyr Ser Lys Ser Glu Met Gln Ile His
 1               5                  10                  15
Ser Lys Ser His Thr Glu Thr Lys Pro His Lys Cys Pro His Cys Ser
            20                  25                  30
Lys Thr Phe Ala Asn Ser Ser Tyr Leu Ala Gln His Ile Arg Ile His
        35                  40                  45
Ser Gly Ala Lys Pro Tyr Ser Cys Asn Phe Cys Glu Lys Ser Phe Arg
    50                  55                  60
Gln Leu Ser His Leu Gln Gln His Thr Arg Ile His Thr Gly Asp Arg
65                  70                  75                  80
Pro Tyr Lys Cys Ala His Pro Gly Cys Glu Lys Ala Phe Thr Gln Leu
                85                  90                  95
Ser Asn Leu Gln Ser His Arg Arg Gln His Asn Lys Asp Lys Pro Phe
            100                 105                 110
Lys Cys His Asn Cys His Arg Ala Tyr Thr Asp Ala Ala Ser Leu Glu
        115                 120                 125
Val His Leu Ser Thr His Thr
    130                 135
```

<210> 203
<211> 135
<212> PRT
<213> Homo sapien

<400> 203

```
Leu Leu Leu Ala Arg Trp His Ser Ala Ala Phe Lys Val Arg Ala Gly
 1               5                  10                  15
Ala Arg Gln Glu Leu Ala Met Lys Ser Leu Lys Ser Arg Leu Arg Arg
            20                  25                  30
Gln Asp Val Pro Gly Pro Ala Ser Ser Gly Ala Ala Ala Ala Ser Ala
        35                  40                  45
His Ala Ala Asp Trp Asn Lys Tyr Asp Asp Arg Leu Met Lys Ala Ala
    50                  55                  60
Glu Arg Gly Asp Val Glu Lys Val Thr Ser Ile Leu Ala Lys Lys Gly
65                  70                  75                  80
Val Asn Pro Gly Lys Leu Asp Val Glu Gly Arg Ser Val Phe His Val
                85                  90                  95
Val Thr Ser Lys Gly Asn Leu Glu Cys Leu Asn Ala Ile Leu Ile His
            100                 105                 110
Gly Val Asp Ile Thr Thr Ser Asp Thr Ala Gly Arg Asn Ala Leu His
        115                 120                 125
Leu Ala Ala Lys Tyr Gly His
    130                 135
```

<210> 204
<211> 167
<212> PRT
<213> Homo sapien

<400> 204

```
Ala Leu Gly Glu Ala Pro Asp His Ser Tyr Glu Ser Leu Arg Val Thr
 1               5                  10                  15
Ser Ala Gln Lys His Val Leu His Val Gln Leu Asn Arg Pro Asn Lys
            20                  25                  30
Arg Asn Ala Met Asn Lys Val Phe Trp Arg Glu Met Val Glu Cys Phe
```

```
        35                  40                  45
Asn Lys Ile Ser Arg Asp Ala Asp Cys Arg Ala Val Val Ile Ser Gly
    50                  55                  60
Ala Gly Lys Met Phe Thr Ala Gly Ile Asp Leu Met Asp Met Ala Ser
65                  70                  75                  80
Asp Ile Leu Gln Pro Lys Gly Asp Asp Val Ala Arg Ile Ser Trp Tyr
                85                  90                  95
Leu Arg Asp Ile Ile Thr Arg Tyr Gln Glu Thr Phe Asn Val Ile Glu
            100                 105                 110
Arg Cys Pro Lys Pro Val Ile Ala Ala Val His Gly Gly Cys Ile Gly
        115                 120                 125
Gly Gly Val Asp Leu Val Thr Ala Cys Asp Ile Arg Tyr Cys Ala Gln
    130                 135                 140
Asp Ala Phe Phe Gln Val Lys Glu Val Asp Val Gly Leu Ala Ala His
145                 150                 155                 160
Val Gly Thr Leu Gln Arg Leu
                165
```

<210> 205
<211> 381
<212> DNA
<213> Homo sapien

<400> 205
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aaatttggga tcatcgcctg ttctgaaaac tagatgcacc aaccgtatca ttatttgttt     60
gaggaaaaaa agaaatctgc attttaattc atgttggtca aagtcgaatt actatctatt    120
tatcttatat cgtagatctg ataaccctat ctaaaagaaa gtcacacgct aaatgtattc    180
ttacatagtg cttgtatcgt tgcatttgtt ttaatttgtg gaaaagtatt gtatctaact    240
tgtattactt tggtagtttc atctttatgt attattgata tttgtaattt tctcaactat    300
aacaatgtag ttacgctaca acttgcctaa aacattcaaa cttgttttct tttttctgtt    360
gtttctttg ttaattcatt t                                               381
```

<210> 206
<211> 514
<212> DNA
<213> Homo sapien

<400> 206
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aaaagtaaat tgcataaaat tacatccaat ttctttctct aaaccaacat attcttcacc     60
ttcacaaagc aaacacatgg tgcactgaaa ccgaggtgtt accagcttta catactgttc    120
tgccatttgt ggggggtgca accacaacat aagtcagaaa aaaagctatc cagcttttcg    180
tggaatctgg tgaagtttac acttagcgat aagcctctaa gcctgaactt agcagggcta    240
gcaaaacttt atttatttcc taactcctat tattttagaa tggttttcaa aataatactg    300
caagttccta attgaaatac aaaacagaac aaaaagctgt gagaaatctt ttttttttctt    360
tggctcctta aagacttgga ataatttata ttagtgttgc atacatttta ccttctacat    420
tttgatgtac ttgctcttga aagcactaga acaaattaat tgaaataaaa cctctctgaa    480
accatttgaa tctttgatcc taccatagag tttt                                514
```

<210> 207
<211> 522
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(522)
<223> n = A,T,C or G

<400> 207
caagcttttg gtgcatagca gccngcctgg aagcattctg agtgctctgt ctgccctggt 60
gggtttcatt atcctgtctg tcaaacaggc caccttaaat cctgcctcac tgcagtgtga 120
gttggacaaa aataatatac caacaagaag ttatgtttct tacttttatc atgattcact 180
ttataccacg gactgctata cagccaaagc cagtctggct ggaactctct ctctgatgct 240
gatttgcact ctgctggaat tctgcctagc tgtgctcact gctgtgctgc ggtggaaaca 300
ggcttactct gacttccctg ggagtgtact tttcctgcct cacagttaca ttggtaattc 360
tggcatgtcc tcaaaaatga ctcatgactg tggatatgaa gaactattga cttcttaaga 420
aaaaagggag aaatattaat cagaaagttg attcttatga taatatggaa aagttaacca 480
ttatagaaaa gcaaagcttg agtttcctaa atgtaagctt tt 522

<210> 208
<211> 278
<212> DNA
<213> Homo sapien

<400> 208
aaaatgcact accccttttt tccaacacgg agcttaaaac aaattaatga aagagtggaa 60
aattcaaaat aagggcaaga gataaggttt tttttttttt tcctttaaga tagactcagg 120
ataggtagat agctttcact gatgtagatg tggaataaat tattacttca ggaaaaaaat 180
tcccaaacat cttatgaaaa agtatacaac tctacttcaa aatatgctat ttactcactg 240
ccaaagacag ttttatttga aatcttgttt ctgtattt 278

<210> 209
<211> 234
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(234)
<223> n = A,T,C or G

<400> 209
cctcccaaat ttagcaggtg ctgggnagga ccctagggag tggtttatgg gggctagctg 60
gtgaaactgc cctttccttt ctgttctatg agtgtgatgg tgtttgagaa aatgtggggc 120
tatggttcag gcgcacttca catgtgcaaa gatggagaaa gcactcacct acacgtttag 180
gctcagaatg ttgattgaaa cattttgaat gatcaaaaat aaaatgttat tttt 234

<210> 210
<211> 186
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(186)
<223> n = A,T,C or G

<400> 210
aaaataactg atggcaaaat aaaanattta catcacatca tactgtgtaa acatgtaagg 60
tctctgtaca aagaaatata catgcaaaat aatgtaaaaa tttaactgaa ataataaaag 120
aaacaataca caaataaaaa ttatgaggtt acgaatacac atccagtttc gaatccaatt 180
tctttt 186

<210> 211
<211> 403
<212> DNA

<213> Homo sapien

<400> 211
aaaaattggt aaaatattta agtacaaaat aagtagcttc cagcgaggtt tttataccat 60
agtaagagca cacaatagat attactagca cacatgggtt atctgggagc gctatagcta 120
caataaacct aattatggaa cagaaatttg cattctgttt ccagtgctac tacactccta 180
ctttctcaaa agtctgctct attaatatca gctcagtgca gtttactatg aatagtttat 240
gtctgtgatg caaagcatta attgttctct ttttacaaac atacattttt ttcataagga 300
agactggggg aaaacccaga aacatacaga gaaaaggaaa gcatcatcaa atatatgtta 360
aaaattaaga tgatgtttac tactagtcat cctacaacaa ttt 403

<210> 212
<211> 345
<212> DNA
<213> Homo sapien

<400> 212
cctctttatg agttcattac tgctgttcag tctcggcaca cagacacccc tgtgcaccgg 60
ggtgtacttt ctactctgat cgctgggcct gtggttgaga taagtcacca gctacggaag 120
gtttctgacg tagaagagct taccccctcca gagcatcttt ctgatcttcc accattttca 180
aggtgtttaa taggaataat aataaagtct tcgaatgtgg tcaggtcatt tttggatgaa 240
ttaaaggcat gtgtggcttc taatgatatt gaaggcattg tgtgcctcac ggctgctgtg 300
catattatcc tggttattaa tgcaggtaaa cataaaagct caaaa 345

<210> 213
<211> 318
<212> DNA
<213> Homo sapien

<400> 213
aaaatgtttt attattttga aaataatgtt gtaattcatg ccagggactg acaaaagact 60
tgagacagga tggttattct tgtcagctaa ggtcacattg tgcctttttg acctttttctt 120
cctggactat tgaaatcaag cttattggat taagtgatat ttctatagcg attgaaaggg 180
caatagttaa agtaatgagc atgatgagag tttctgttaa tcatgtatta aaactgattt 240
ttagctttac aaatatgtca gtttgcagtt atgcagaatc caaagtaaat gtcctgctag 300
ctagttaagg attgtttt 318

<210> 214
<211> 462
<212> DNA
<213> Homo sapien

<400> 214
aaacacatct ggttctggca gcaagttata ttatgcattt agagcaatag gtgccctgaa 60
agttattgtt gctttttttg tttttttttt cagtttgtgc gtgtcacttg aatcagaaac 120
caaacacatg taaaaaaata tcatcctcaa tgccccccat taactctctc tccagaaggt 180
gacaatgtta gtgaactcaa gactctcact gatgatggta ttttacaatg aaaacacaag 240
gaaacccttt gaggtccaat tttcacatca tattctccaa atagtaaaat agcagctcta 300
catgttgatg aaaagaaatt tcaatttctt cctatttgtt tttactcata tcaacattaa 360
tatgtatctg gatttattaa tttccaaaaa gaaaatttta gttaccaaat atttcagaaa 420
tttaataaag cattatatat atgtaattag cacttatcta cc 462

<210> 215
<211> 280
<212> DNA
<213> Homo sapien

<400> 215

aaacttttct gaaacgatta gctgtagcca aattatgtgg ttacgttttg ctacattaga 60
atttgaaaat gcaatatgtg tggtaaatct actgtttgaa atttataatg gtctctgata 120
tgattcgaat tttggtaact tttgaaagtt attttccccc tttagtcatg gatttctatt 180
tgttttttaa tgttaatttt tctagaaagc atctgaattg actaggcttt tcctatataa 240
aaaactcaaa acttgttaac tctgtacttt aataaaattt 280

<210> 216
<211> 210
<212> DNA
<213> Homo sapien

<400> 216
aaaatctctg gcttcaaagt ttcttgggga aaggtcggtt tacctcacat tttttgtttc 60
cattagtaat attctaggta cctcacaaaa tgtattatgg tgccatggct gttagttttt 120
agtgagtgct gtaggattaa ttcgaaaata ggcagaattc cattcctccc aaggtggcaa 180
aaattagcta tactgatgta attgtcattt 210

<210> 217
<211> 398
<212> DNA
<213> Homo sapien

<400> 217
ctggagctgc tagaacttga gatgagggca agagcgatta aagccctaat gaaagctggt 60
gatataaaaa agccagccta ggtatttaac ttgattttga attttaggta tgtttgaaca 120
aagccacatc atttaatttt gtatctaaaa tttatttggg gtcttatatg ttatttctca 180
tgtaaccctt attaggactc attttagccc taaattacct gtggctgttt ctttttattt 240
ttttgactac ttttatatta taaatgtgtg ttactgtctt atgaattcat ggcaatatag 300
ttggatagcc tggatacttt gttagatgag tatttagctg tgtctgcaaa tcttaaaagc 360
cattagcaaa gagtcgtggt atttttttct ttattttt 398

<210> 218
<211> 487
<212> DNA
<213> Homo sapien

<400> 218
ctgccgccgg tcaggctggt taaagatcag gtcccccagg accttgcgat ttatgtcgcc 60
attctccagc aagacctcag tgccgaagac ctctacgatg cgccggtggg cagggtatcc 120
tggctgcacg acgtgccggg ccatcacgtc cacgtcaatc accgcacagc ccagtttcag 180
tgtttttaca cattatattg ttataatctc acaataacta taaattaggt agaacaggaa 240
atgaggtttg gagaagatac ttgacttatc cgaccatctg tacttgtccc atagtaagga 300
gcctcaagca gagacaaagg aggaagttgc ctatgttgta tggtttacag gccataaatg 360
aatgtcatct ttttcctccc ctggggaaaa atgtctcaaa aatcccacca taggacatga 420
catctccaga acctctatta caaaatacac atttcctgta gaggggtaac aaatttgggt 480
taacctg 487

<210> 219
<211> 390
<212> DNA
<213> Homo sapien

<400> 219
aaaaaataca ccacacgata caactcaata caggagtatt tcttctcaaa ttcttctagc 60
accatcaaca ttcttcaagt atctgaaata ctattaatta gcacctttgt attatgaaca 120
aaacaaaaca aggacctcag ttcatctctg tctaggtcag cacctaacaa tgtggatcac 180
actcatggga aagtgttttg aggtagttta aacctttgga agtttgggtt ttaaacttcc 240
ctctgtggaa gatattcaaa agccacaagt ggtgcaaatg tttatggttt ttatttttca 300

```
atttttattt tggttttctt acaaaggttg acattttcca taacaggtgt aagagtgttg     360
aaaaaaaagt tcaaattttt gggggagcgg                                      390

      <210> 220
      <211> 341
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(341)
      <223> n = A,T,C or G

      <400> 220
aaaacaggca aagttttaca gagaggatac atttaataaa actgcgagga catcaaagtg      60
gtaaatactg tgaaatacct tttctnnnca aaaggcaaat attgaagttg tttatcaact     120
tcgctagaaa aaaaaaaaca cttggcatac aaaatattta agtgaaggag aagtctaacg     180
ctgaactnnn aatgaaggga aattgtttat gtgttatgaa catccaagtc tttcttcttt     240
tttaagttgt caaagaagct tccacaaaat tagaaaggac aacagttctg agctgtaatt     300
tcgccttaaa ctctggacac tctatatgta gtgcattttt a                         341

      <210> 221
      <211> 234
      <212> DNA
      <213> Homo sapien

      <400> 221
ccaggggga ttgagggagg ctctaagcta ggggcactgc atggtgggac aggatggccc       60
cttgaggact gaaccctggg gagaagacaa acagtaataa taaaaacaaa taacaagtac     120
tttaagaatg gattgtatga cctatagtga cagatgacat cactaatact gaaagcttct     180
tatattaata attttggcaa aatgtcattt tgtaatatag tatatgcttt ccag           234

      <210> 222
      <211> 186
      <212> DNA
      <213> Homo sapien

      <400> 222
aaattttcat tgagttgtcc atctccagca tatagggctt caggagcaga gcagaccttg      60
tttttagtgg ttccatggga taaaatggga ttggaggagc tagaagaatt cagggtctgg     120
tccaatctgc cagtcttcct gaaatatcga aaatacacca gggctgctat atcagagcca     180
ccctgg                                                                186

      <210> 223
      <211> 486
      <212> DNA
      <213> Homo sapien

      <400> 223
ccataagcag ataagtagca gttcaactgg atgtctctct tctccaaatg ctacagtaca      60
aagccctaag catgagtgga aaatcgttgc ttcagaaaag acttcaaata acacttactt     120
gtgcctggct gtgctggatg gtatattctg tgtcattttt cttcatggga gaaacagccc     180
acagagctca ccaacaagta ctccaaaact aagtaagagt ttaagctttg agatgcaaca     240
agatgagcta atcgaaaagc ccatgtctcc tatgcagtac gcacgatctg gtctgggaac     300
agcagagatg aatggcaaac tcatagctgc aggtggctat aacagagagg aatgtcttcg     360
aacagtcgaa tgctataatc cacatacaga tcactggtcc tttcttgctc ccatgagaac     420
accaagagcc cgatttcaaa tggctgtact catgggccag ctctatgtgg taggtggatc     480
aaatgg                                                                486
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<210> 224
<211> 322
<212> DNA
<213> Homo sapien

<400> 224
aaatgttcac tatgtcattt agtgtccaac tttacggata ggttgactat ctaaataggc 60
atttttagtc attaaaaaaa aatctagtca ccaggaggat ccctataact caaaataact 120
tgtttgtaaa agaaaatttg tttacttacc cattagtaag ttcctgcata ttcattataa 180
gatggcaaat caaacttttc taggatgaag acagcttatt tttaagttgt atagtcttag 240
ttggtttagg gtctcaattt taattaataa aatacttggt ttttatttgc ttgtcctttt 300
gaattcctgt tttaataatt tt 322

<210> 225
<211> 489
<212> DNA
<213> Homo sapien

<400> 225
aaatgtagga ataaaatggc tggcatctaa gcactttagt aaaagaggtt tttacaaata 60
actaaggatt gtagagcttc cttctctttt tttttctttt tctttctttt gttttacatg 120
aactcaactt attcctaaca tttgtctacc tcaaagaaat ttcaagatta tttagataac 180
atggatatgt gccaaatcct ttgagctgtt aagatgataa tttcctgctt tcctcctaca 240
tcttctcctc ccactccctc ctttggtgtg aatattggct tcccaattaa gaccttttt 300
tttttttcc agtttgtttt agcttattat aggttttgga ggaactttgc cattttgtaa 360
tctttcaaat cattcttcac ccttcctcac atcagcttcc tgcttttccc agtgttttac 420
tgtaaattgt gtagcatatg acaaatcttg agctgacttt cctcttcact gatgtcatct 480
tgagctctt 489

<210> 226
<211> 398
<212> DNA
<213> Homo sapien

<400> 226
caagggccca ccgcagagca cacctatgct atggggagcc ctgctggcag ccccgagagc 60
catgccatgg cctgcaggag ccaggctcct gtgtggatga agtccctctt cctctgtgcc 120
ttgatccctt gggggtgcct ttggtcatct cttctgtcct ttcctgtctc tgaaatagtc 180
atcactcccc ttgactctct ctgttcacgt cttctcagtc tgcagagtta acttctgtaa 240
ggagtttaat ctggggttcc aagaaaacaa gttccttgtt aacatagcac tgactttgca 300
acaatagaaa actaacaaat gagcaacaat ataaagagta gaggtagttc tcattgggtg 360
taacttcaac ccattctgct tgtggttaga atttataa 398

<210> 227
<211> 535
<212> DNA
<213> Homo sapien

<400> 227
ctgctgcata gaaaatatgc taacatacaa cagtcaagtt taagcctgtg catagagaag 60
ataaagcact tatggtaact gcaaatggta acgagtcctt aaggtttgta caacctagta 120
tgggtccata aggaaaaact gtagtagaaa tggttaggac aaacaataaa gtagaaacag 180
gggggaaact tgagaagaga agaaagaagc aagaaaaaaa gactttcaat tgtataaaat 240
tcacaaacca gtaaagtata aagacaccat ggagaaatgg ttaactctgc cccaaacacc 300
caacagcaaa caaaaccaga atgaataagc ctttggcaga caattttaga aatttgaatg 360
ttacatttct caataattca caaacaatat attatatggt atatttatat taaatattgg 420
gaaaccaatg ttgtaaattt gatgcttata atgctttagc caatgagagc acaatgatat 480

caatcaagct aaatgaatgc tggtgttatc acaacagtgc tcatttatga aacaa 535

<210> 228
<211> 301
<212> DNA
<213> Homo sapien

<400> 228
aaacaataaa caccatcaac cttattgact ttattgtccc ttaaattata ttgactgttg 60
tgattccatc aagtttgtac actcttttct ctccctgttt tgcagcaaca aattgcgaag 120
tgcttttgtt tgtttgtttt cgtttggtta aagcttattg ccatgctggt gcggctatgg 180
agactgtctg gaaggcttgg aatggtttat tgcttatggt aaaatttgcc tgatttctta 240
caggcagcgt ttggaaacct tttattatat agttgtttac atacttataa gtctatcatt 300
t 301

<210> 229
<211> 420
<212> DNA
<213> Homo sapien

<400> 229
aaagttgctt tgctggaagt ttttataagg aatctcagat taaaccttta gaagtttaat 60
tgacactagg aagccaaacc aaggctgact tcagactttg tttgtagtac ctgtgggttt 120
attacctatg ggtttatatc ctcaaatacg acattctagt caaagtcttg gtaatataac 180
caatgttttc aaatgtattc tgtcatacaa agagcagatt tttattgaac ttgtgcaata 240
actatattac catacaatat aaatattcat gaatagtttc ccaagtctgg agcgaccaca 300
tagggagaaa atgcaaatgt ctcaattttt gttcacaaaa gtatatttta tcaaattgct 360
gtaagctgtg gatagcttaa aagaaaaaaa gtttcctgaa atctgggaaa caagacattt 420

<210> 230
<211> 419
<212> DNA
<213> Homo sapien

<400> 230
gtgaagtcct aaagcttgca ttccaccagc ttctacaata gccggcttat tactagagca 60
gacagatagc accttcagca ctctgcttgt ggtccacagt agtttttcgt aagtataggt 120
cctcattata tttactaaag cttggggtcc accactagcc agtatgatga gcttgctttc 180
ttggttgcca taagctaaaa tttgaaggca gtctgtcgta atagccaaga atttaacatt 240
tgttttgttg agcaaggcaa ccatttctg cagcccacca gctaaacgca ctgccatttt 300
agctccttct tgatgtaata aaaggttgtg gagagttgta atggcataaa acaacacaga 360
atccactggt gaaccaagca ttttcaccag ggcaggaatg cctccagact taaagatgg 419

<210> 231
<211> 389
<212> DNA
<213> Homo sapien

<400> 231
ttgttcagag ccctggtgga tcttgcaatc cagtgcccta caaaggctag aacactacag 60
gggatgaatt cttcaaatag gagccgatgg atctgtggtc ctttgggact catcaaagcc 120
ttggtttagc attttgtcag ttttatcttc agaaattctc tgcgattaag aagataattt 180
attaaaggtg gtccttccta cctctgtggt gtgtgtcgcg cacacagctt agaagtgcta 240
taaaaaagga aagagctcca aattgaatca cctttataat ttacccattt ctatacaaca 300
ggcagtggaa gcagtttcag agaacttttt gcatgcttat ggttgatcag ttaaaaaaga 360
atgttacagt aacaaataaa gtgcagttt 389

<210> 232

<211> 397
<212> DNA
<213> Homo sapien

<400> 232
ccaggataat atacacaggt ttgcagctaa aactgtgcac agtgggtcat tgatgctagt 60
cacagtggaa ctgaaggaag gctctacagc ccagcttatc ataaacactg agaaaactgt 120
gattggctct gttctgctgc gggaactgaa gcctgtcctg tctcaggggt aacctgctta 180
catctggact ttagaatctg gcacacaaca aaagtgcctg gcatccacta ctgctgcctt 240
tcatttataa taatagccct tccatctggc agtgggggaa gaatacactc ttgacattct 300
tgtctcctgc tttagaatgc tagtgtgtat ctatcatgta tgcaatactt tccccctttt 360
tgctttgcta accaaagagc atatatttta ctgtcag 397

<210> 233
<211> 508
<212> DNA
<213> Homo sapien

<400> 233
cgaggagtcg cttaagtgcg aggacctcaa agtgggacaa tatatttgta aagatccaaa 60
aataaatgac gctacgcaag aaccagttaa ctgtacaaac tacacagctc atgtttcctg 120
ttttccagca cccaacataa cttgtaagga ttccagtggc aatgaaacac attttactgg 180
gaacgaagtt ggtttttca agcccatatc ttgccgaaat gtaaatggct attcctacaa 240
agtggcagtc gcattgtctc tttttcttgg atggttggga gcagatcgat tttaccttgg 300
ataccctgct ttgggtttgt taaagttttg cactgtaggg ttttgtggaa ttgggagcct 360
aattgatttc attcttattt caatgcagat tgttggacct tcagatggaa gtagttacat 420
tatagattac tatggaacca gacttacaag actgagtatt actaatgaaa catttagaaa 480
aacgcaatta tatccataaa tatttttt 508

<210> 234
<211> 358
<212> DNA
<213> Homo sapien

<400> 234
aaatgttggt attcaaaacc aaagatataa ccgaaaggaa aaacagatga gacataaaat 60
gatttgcaag atgggaaata tagtagttta tgaatgtaaa ttaaattcca gttataatag 120
tggctacaca ctctcactac acacacagac ccccacagtcc tatatgccac aaacacattt 180
ccataacttg aaaatgagta ttttgcatat ctcagttcag gatatgtttt ttacaagtta 240
atcctaaagt cataaagcaa gaagctattc atagtacaag attttatttg ctaagcttta 300
caaattaaac tctaaaaaat tattacaatg atactgaaag atattttatt ggcctttt 358

<210> 235
<211> 482
<212> DNA
<213> Homo sapien

<400> 235
gaagaaagtt agatttacgc cgatgaatat gatagtgaaa tggattttgg cgtaggtttg 60
gtctagggtg tagcctgaga atagggggaaa tcagtgaatg aagcctccta tgatggcaaa 120
tacagctcct attgatagga catagtggaa gtgagctaca acgtagtacg tgtcgtgtag 180
tacgatgtct agtgatgagt ttgctaatac aatgccagtc aggccaccta cggtgaaaag 240
aaagatgaat cctagggctc agagcactgc agcagatcat ttcatattgc ttccgtggag 300
tgtggcgagt cagctaaata ctttgacgcc ggtggggata gcgatgatta tggtagcgga 360
ggtgaaatat gctcgtgtgt ctacgtctat tcctactgta aatatatggt gtgctcacac 420
gataaaccct aggaagccaa ttgatatcat agctcagacc atacctatgt atccaaatgg 480
tt 482

<210> 236
<211> 149
<212> DNA
<213> Homo sapien

<400> 236
cctcttcatt gttcacatgt cacaggagga ggctctgagc aaaggccact ggcaagttag 60
ggcaacacca agaaggctct gcggagagac tccctgtggg ttggggcctg gcaggaacgg 120
tgcctgtgga ctgtttatgg tctgtccag 149

<210> 237
<211> 391
<212> DNA
<213> Homo sapien

<400> 237
gaagctaaat ccaaagaaat atgaaggtgg ccgtgaatta agtgatttta ttagctatct 60
acaaagagaa gctacaaacc cccctgtaat tcaagaagaa aaacccaaga agaagaagaa 120
ggcacaggag gatctctaaa gcagtagcca aacaccactt tgtaaaagga ctcttccatc 180
agagatggga aaaccattgg ggaggactag gacccatatg ggaattatta cctctcaggg 240
ccgagaggac agaatggata taatctgaat cctgttaaat tttctctaaa ctgtttctta 300
gctgcactgt ttatggaaat accaggacca gtttatgttt gtggttttgg gaaaaattat 360
ttgtgttggg ggaaatgttg tgggggtggg g 391

<210> 238
<211> 374
<212> DNA
<213> Homo sapien

<400> 238
aaaaaacaaa acaatgtaag taaaggatat ttctgaatct taaaattcat cccatgtgtg 60
atcataaact cataaaaata attttaagat gccggaaaag gatactttga ttaaataaaa 120
acactcatgg atatgtaaaa actgtcaaga ttaaaattta atagtttcat ttatttgtta 180
ttttatttgt aagaaatagt gatgaacaaa gatccttttt catactgata cctggttgta 240
tattatttga tgcaacagtt ttctgaaatg atatttcaaa ttgcatcaag aaattaaaat 300
catctatctg agtagtcaaa atacaagtaa aggagagcaa ataaacaaca tttggaaaaa 360
aaaaaaaaaa aaaa 374

<210> 239
<211> 200
<212> DNA
<213> Homo sapien

<400> 239
aaagatgtct ttgaccgcat atgtactgga aatttcaaac gtggatcttc ccaggttgta 60
gtctttgtgt tatgatcaat gaagaagggc cggccgtttg gcgctatcct catttcccag 120
ccgggtggca agaagctctg tgtgactttg tgttgtggtt tgggggagtt gtaaggtgat 180
ggctgtgggg actgtgggtt 200

<210> 240
<211> 314
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(314)
<223> n = A,T,C or G

<400> 240
ctggtaaact gtccaaaaca aggttccaaa taacacctct tactgattta ccctacccat 60
acatatncca natagntttt gatcaaaaac atgaaatana tccacctgct tattttaagc 120
atattaaaaa ggaaactaat tggaccattt tctatttgtc tattttatac aaaaaggcta 180
cacaattgat acactctatt cagataacaa tcaattagag tgantatgaa ttactggcga 240
caccatcact caattcttaa aaattagaaa ttgctgtagc agtattcact ataacttaac 300
actaccgaga gact 314

<210> 241
<211> 375
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(375)
<223> n = A,T,C or G

<400> 241
ccaagtcctt ggagttatag gatattcatt acttcctctc attgtaatag cccctgtact 60
tttggtggtt ggatcatttg aagtggtgtc tacacttata aaactgtttg gtgtgttttg 120
ggctgcctac agtgctgctt cattgttagt gggtgaagaa ttcaagacca aaaagcctct 180
tctgatttat ccaatctttt tattatacat ttatcttttg tcgttatata ctggtgtgtg 240
atccaagtta tacatgaata gaaaaagatg gtgttaaatt tgtgtgtagg ctgggaattc 300
tngctaaagg aatggnaaaa aacctgtnnt tgnaaaattn acntgtccca aagnnaagga 360
anctaaacgc ttttt 375

<210> 242
<211> 387
<212> DNA
<213> Homo sapien

<400> 242
aaaggcattc tctgatttac atgagaattg agaaactgag atgtatgatt tgtctgttag 60
tcaatttcac accctttcat tctcataagc cccaaatttt gctcagttaa ggagcttgct 120
ttaggcccac ctatgtaagt ctgttatact agctaatgtg cccatttgaa tagttcaagg 180
gtcagctaat gctctgagct tcatggctcc agtataaaga acaaatttaa caaaattaag 240
ctgttactgt agccgagtta cccttctgct ccacacatat gtagtgggat cttgcaggat 300
ttccatagtg ccaattatca aaggccttga ctacttagca ttgctgtatt acagatgtgc 360
aaactgaggc actgaaaagt caaattt 387

<210> 243
<211> 536
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(536)
<223> n = A,T,C or G

<400> 243
aaaccaaaag gacgaagaaa aaacactttn aaaaaaaaaa aaaaaaaaga aaaaccaaac 60
catattttgc cacatgtgag agtacggtca agcagtattt acaaaaaggt taacggaaca 120
acactctgac acatgctctg agaatactgg gactgctgtt tcaaaaaaaa aggttcaaac 180
ttattgtcac agcatcatca caaaatagag gatcaccatt ggtttgcttg gcttttcttt 240
ttttttttcc cccaagtgag gacctaactc caaataatac aatagaatat gcaaattatc 300

```
ttcacatcaa gagtacccca agaaaaacga aatccatggc acanacactg tacaagggtg     360
cagggcaggg ctctgagggg cccaaacccc atttgccaa ctcgatttc tagcattgaa     420
gggagcaagg ggtcaggcat atgatggaga tgatactgaa atgatttatc caaaatccat     480
gcaaatcaag ttctttggat agaggtgaan aacttggaca tggctgtttc aggcag     536
```

<210> 244
<211> 397
<212> DNA
<213> Homo sapien

<400> 244

```
ccaggataat atacacaggt ttgcagctaa aactgtgcac agtgggtcat tgatgctagt      60
cacagtggaa ctgaaggaag gctctacagc ccagcttatc ataaacactg agaaaactgt     120
gattggctct gttctgctgc gggaactgaa gcctgtcctg tctcaggggt aacctgctta     180
catctggact ttagaatctg gcacacaaca aaagtgcctg gcatccacta ctgctgcctt     240
tcatttataa taatagccct tccatctggc agtgggggaa gaatacactc ttgacattct     300
tgtctcctgc tttagaatgc tagtgtgtat ctatcatgta tgcaatactt tcccctttt     360
tgctttgcta accaaagagc atatatttta ctgtcag     397
```

<210> 245
<211> 508
<212> DNA
<213> Homo sapien

<400> 245

```
cgaggagtcg cttaagtgcg aggacctcaa agtgggacaa tatatttgta aagatccaaa      60
aataaatgac gctacgcaag aaccagttaa ctgtacaaac tacacagctc atgtttcctg     120
ttttccagca cccaacataa cttgtaagga ttccagtggc aatgaaacac attttactgg     180
gaacgaagtt ggtttttca agcccatatc ttgccgaaat gtaaatggct attcctacaa     240
agtggcagtc gcattgtctc tttttcttgg atggttggga gcagatcgat tttaccttgg     300
ataccctgct ttgggtttgt taaagttttg cactgtaggg ttttgtggaa ttgggagcct     360
aattgatttc attcttattt caatgcagat tgttggacct tcagatggaa gtagttacat     420
tatagattac tatggaacca gacttacaag actgagtatt actaatgaaa catttagaaa     480
aacgcaatta tatccataaa tatttttt     508
```

<210> 246
<211> 358
<212> DNA
<213> Homo sapien

<400> 246

```
aaatgttggt attcaaaacc aaagatataa ccgaaaggaa aaacagatga gacataaaat      60
gatttgcaag atgggaaata tagtagttta tgaatgtaaa ttaaattcca gttataatag     120
tggctacaca ctctcactac acacacagac cccacagtcc tatatgccac aaacacattt     180
ccataacttg aaaatgagta ttttgcatat ctcagttcag gatatgtttt ttacaagtta     240
atcctaaagt cataaagcaa gaagctattc atagtacaag attttatttg ctaagcttta     300
caaattaaac tctaaaaaat tattacaatg atactgaaag atattttatt ggcctttt     358
```

<210> 247
<211> 673
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(673)
<223> n = A,T,C or G

<400> 247
gaagaaagtt agatttacgc cgatgaatat gatagtgaaa tggattttgg cgtaggtttg 60
gtctagggtg tagcctgaga ataggggaaa tcagtgaatg aagcctccta tgatggcaaa 120
tacagctcct attgatagga catagtggaa gtgagctaca acgtagtacg tgtcgtgtag 180
tacgatgtct agtgatgagt ttgctaatac aatgccagtc aggccaccta cggtgaaaag 240
aaagatgaat cctagggctc agagcactgc agcagatcat ttcatattgc ttccgtggag 300
tgtggcgagt cagctaaata ctttgacgcc ggtggggata gcgatgatta tggtagcgga 360
ggtgaaatat gctcgtgtgt ctacgtctat tcctactgta aatatatggt gtgctcacac 420
gataaaccct aggaagccaa ttgatatcat agctcagacc atacctatgt atccaaatgg 480
ttcttttttt ccggagtagt aagttacaat atgggagatt attccgaagc ctggtaggat 540
aagaatataa acttcagggt gaccgaaaaa tcagaatagg tgttggtata gaatggggtc 600
tcctnctccg cggggtcnaa gaaggtggtg ttgangttgc cggnctgtta ntagtatagn 660
gatgccanca gct 673

<210> 248
<211> 149
<212> DNA
<213> Homo sapien

<400> 248
cctcttcatt gttcacatgt cacaggagga ggctctgagc aaaggccact ggcaagttag 60
ggcaacacca agaaggctct gcggagagac tccctgtggg ttggggcctg gcaggaacgg 120
tgcctgtgga ctgtttatgg tctgtccag 149

<210> 249
<211> 458
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(458)
<223> n = A,T,C or G

<400> 249
gaagctaaat ccaaagaaat atgaaggtgg ccgtgaatta agtgatttta ttagctatct 60
acaaagagaa gctacaaacc cccctgtaat tcaagaagaa aaacccaaga agaagaagaa 120
ggcacaggag gatctctaaa gcagtagcca aacaccactt tgtaaaagga ctcttccatc 180
agagatggga aaaccattgg ggaggactag gacccatatg ggaattatta cctctcaggg 240
ccgagaggac agaatggata taatctgaat cctgttaaat tttctctaaa ctgtttctta 300
gctgcactgt ttatggaaat accaggacca gtttatgttt gtggttttgg gaaaaattat 360
ttgtgttggg ggaaatgttg tgggggtggg gttgagttgg gggtatttc taattttttt 420
tgtacatttg gaacagtgac aataaatgan acccсttt 458

<210> 250
<211> 374
<212> DNA
<213> Homo sapien

<400> 250
aaaaaacaaa acaatgtaag taaaggatat ttctgaatct taaaattcat cccatgtgtg 60
atcataaact cataaaaata attttaagat gccggaaaag gatactttga ttaaataaaa 120
acactcatgg atatgtaaaa actgtcaaga ttaaaattta atagtttcat ttatttgtta 180
ttttatttgt aagaaatagt gatgaacaaa gatccttttt catactgata cctggttgta 240
tattatttga tgcaacagtt ttctgaaatg atatttcaaa ttgcatcaag aaattaaaat 300
catctatctg agtagtcaaa atacaagtaa aggagagcaa ataaacaaca tttggaaaaa 360
aaaaaaaaaa aaaa 374

<210> 251
<211> 356
<212> DNA
<213> Homo sapien

<400> 251
aaagatcttc tctaacaagc tatgggaatt tggcttcata ctctttcttt gcaacagcag 60
tgttctgggt gataattttg aattgatacc tgttcctttt tctgggtttt gttggctttt 120
tgaaaaattg tctttcctta tcattggtgg gaggcttggt agcaaagtaa cattttttgg 180
aaaagaggac agaaaaattg aactacagct tgagaacgta ttcttttttt cctactttgt 240
tattgcaaat tgaggaatca cttttaactg ttttaggtgt gtgtgtccag agtgagcaag 300
gattatgttt ttggattgtc aaagaggatg cttagtctta aaataaaaat aaattt 356

<210> 252
<211> 484
<212> DNA
<213> Homo sapien

<400> 252
ctggtaaact gtccaaaaca aggttccaaa taacacctct tactgattta ccctacccat 60
acatatccca aatagttttt gatcaaaaac atgaaataga tccacctgct tattttaagc 120
atattaaaaa ggaaactaat tggaccattt tctatttgtc tattttatac aaaaaggcta 180
cacaattgtt acactttatt cagattacaa ttaattagag tgattatgaa ttagtgttct 240
acaccattac tcaattctta aaaattagaa attgctgtag cagtattcac tataacttaa 300
cactacgaga gacttaaaaa acagttactg caaaaaaaaa aaagagctac ttcaaagcaa 360
gcaaagtcag taccattaca gatattctta aaaaaaaaaa aaaatttaac aagcaaggct 420
agggtttgat aaattccatc ttgtgatcca ttcttgtgca ttcttcactt cttgagtcac 480
tccc 484

<210> 253
<211> 379
<212> DNA
<213> Homo sapien

<400> 253
aaaaagcgct tagacttccc tttccatctg gaacatgtaa aattttgcag caacaggttt 60
tctccaattc cttcagcaag aattcccagc ctacacacaa atttaacacc atctttttct 120
attcatgtat aacttggatc acacaccagt atataacgac aaaagataaa tgtataataa 180
aaagattgga taaatcagaa gaggcttttt ggtcttgaat tcttcaccca ctaacaatga 240
agcagcactg taggcagccc aaaacacacc aaacagtttt ataagtgtag acaccacttc 300
aaatgatcca accaccaaaa gtacaggggc tattacaatg agaggaagta atgaatatcc 360
tataactcca aggacttgg 379

<210> 254
<211> 387
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(387)
<223> n = A,T,C or G

<400> 254
aaatttgact tttcagtgcc tcagtttgca catctgtaat acagcaatgc taagtagtca 60
aggccnttga taattggcac tatggaaatc ctgcaagatc ccactacata tgtgtggagc 120
agaagggtaa ctcggctaca gtaacagctt aattttgtta aatttgttct ttatactgga 180
gccatgaagc tcagagcatt agctgaccct tgaactattc aaatgggcac attagctagt 240

ataacagact tacataggtg ggcctaaagc aagctcctta actgagcaaa atttggggct 300
tatgagaatg aaagggtgtg aaattgacta acagacaaat catacatctc agtttctcaa 360
ttctcatgta aatcagagaa tgccttt 387

<210> 255
<211> 225
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(225)
<223> n = A,T,C or G

<400> 255
aaatgtcttg tttcccagat ttcaggaaan tttttttctt ttaagctatc cacagcttac 60
agcacctttg ataaaatata cttttgtgaa caaaaattga gacatttaca ttttctccct 120
atgtggtcgc tccagacttg ggaaactatt catgaatatt tatattgtat ggtaatatag 180
ttattgcaca agttcaataa aaatctgctc tttgtatgac agaat 225

<210> 256
<211> 544
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(544)
<223> n = A,T,C or G

<400> 256
ccttgcttaa agcccagaag tggtttaggc ntttggaaaa tctggttcac atcataaaga 60
acttgatttg aaatgttttc tatagaaaca agtgctaagt gtaccgtatt atacttgatg 120
ttggtcattt ctcagtccta tttctcagtt ctattatttt agaacctagt cagttcttta 180
agattataac tggtcctaca ttaaaataat gcttctcgat gtcagatttt acctgtttgc 240
tgctgagaac atctctgcct aatttaccaa agccagacct tcagttcaac atgcttcctt 300
agcttttcat agttgtctga catttccatg aaaacaaagg aaccaacttt gttttaacca 360
aactttgttt ggttacagtt ttcaggggag cgtttcttcc atgacacaca gcaacatccc 420
aaagaaataa acaagtgtga caaanaaaaa aacaaaccta aatgctactg ttccaaagag 480
caacttgatg gtttttttta atactgagtg caaaaggnca cccaaattcc tatgatgaaa 540
tttt 544

<210> 257
<211> 420
<212> DNA
<213> Homo sapien

<400> 257
aaatgtcttg tttcccagat ttcaggaaac tttttttctt ttaagctatc cacagcttac 60
agcaatttga taaaatatac ttttgtgaac aaaaattgag acatttacat tttctcccta 120
tgtggtcgct ccagacttgg gaaactattc atgaatattt atattgtatg gtaatatagt 180
tattgcacaa gttcaataaa aatctgctct ttgtatgaca gaatacattt gaaaacattg 240
gttatattac caagactttg actagaatgt cgtatttgag gatataaacc cataggtaat 300
aaacccacag gtactacaaa caaagtctga agtcagcctt ggtttggctt cctagtgtca 360
attaaacttc taaaagttta atctgagatt ccttataaaa acttccagca aagcaacttt 420

<210> 258
<211> 736

<212> DNA
<213> Homo sapien

<400> 258
aaacaaaatg ctaaacctaa aaacattgtt ctgtcagttc ccaaattaaa tctacttaga 60
acaaaaacaa aaatttatag ctcggtcaca tactacttaa ataatattgt tcaggcatct 120
ctaaaatcct ccatgttttc aagtatggaa atagaactca aatattccac aatacagtac 180
taaacagatg gagtatttag gaaagacttt gttgtcatat ggcacaatat taatattttg 240
ttgcttcaat acgttttgaa ataaatatca gatttttgtt tttttttcct aaaagaccaa 300
aattataatc tacattaaga taattctgac tgtggttaag acttaagagt gtaaaataca 360
acatcaatat tttatcacaa aagtaaagct ggtaacaaat tataaaagga gccagtactc 420
tactgagaca ggctcggaga ttaaagctca tcatgataga aatagtcatc atggagctgt 480
ctgccataat ctgtggcttc actggtgaga aacaagtccg ggttttccag aatctcttct 540
tcagagagct ttttgtcacc attcaaatcc atttcatcaa ttagatgaag cgcctcctct 600
tgtgcaatgc cctgattatt aggtctaccc aaggtaacag ctcttgggga tcaagcctgc 660
catcgttatc tttgtcataa tcattcaccg aatctgtctt tctcacaagt atcccattct 720
ggatcttcat ttgcag 736

<210> 259
<211> 437
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(437)
<223> n = A,T,C or G

<400> 259
aaaaccatac tgaaatcatt taccaaataa cnaagatctt aatctaaaag atagtgaata 60
catcatcatc atgaaatctg gttttatgtg ctctatgaag tacttggaga attgcttttt 120
tatttttctt ttgctttatt aggtcacaca aaacagaatg aattagcaga aaaatgtatg 180
ttataaaaca gcatttacta cttcaattta atttttttta ctaacaattg tggacctttt 240
tgatgacact tatgtatgtt tttaataaat tatgtactta ttagtactta atgagccctt 300
cctgcctcaa tataaaatta ctaaacttgg agaattacag attttattgt aggccctgat 360
gttagtcact ttggagaagc taaaaatttg gaaatgatgt aattcccact gtaatagcat 420
agggattttg gaagcag 437

<210> 260
<211> 592
<212> DNA
<213> Homo sapien

<400> 260
tttttttttt gaaaaatata aaattttaat aaaggctaca tctcttaatt acaataatta 60
ttgtaccaag taattttcct taaatgaact ctttataatg cataatttac agtataagta 120
gaacaaaatg tcatgacaaa agtcattgag tacaagactt gtaataaaaa ggcataaaat 180
atatttatac ataaacccct ttcaaaaaac aagggaaagc ttgagccctc aatatagggc 240
gacacacgga gcgggtgacc gtgcaggtac aggtactgta ctgatttaaa gtcaagcact 300
agagatagtg gattaatact cttttgccgt acactatata cagatgtata gtacaagtaa 360
caatggcaaa cagaatgtac agattaactt aacacaaaaa cccgaacatc aaaatgaagg 420
tgtgtggagg aaaggtgctg ctgggtctcc ctacaactgt tcatttcttt gtggggcagg 480
gggtagttcc tgaatggctg tggtccaatg actaatgtaa aacaaaaaca gaaacaaaaa 540
aaacaaggaa ctgtcatttc cacgaaagca cagcggcagt gattctagca gg 592

<210> 261
<211> 450
<212> DNA

<213> Homo sapien

<400> 261
gtggcagggc ccagccccga accagacaag ggacccctca aggagcttca ttctagcatg 60
agaaaattga gaagtaaacc agaaagttac agaatgtctg aaggggacag tgtgggagaa 120
tccgtccatg ggaaaccttc ggtggtgtac agatttttca caagacttgg acagatttat 180
cagtcctggc tagacaagtc cacaccctac acggctgtgc gatgggtcgt gacactgggc 240
ctgagctttg tctacatgat tcgagtttac ctgctgcagg gttggtacat tgtgacctat 300
gccttgggga tctaccatct aaatcttttc atagcttttc tttctcccaa agtggatcct 360
tccttaatgg aagactcaga tgacggtcct tcgctaccca ccaaacagaa cgaggaattc 420
cgccccttca ttcgaaggct cccagagttt 450

<210> 262
<211> 239
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(239)
<223> n = A,T,C or G

<400> 262
taactttgat gacaaaatct aaaattaaag anttagtctt aaaagcctat agtgacttgt 60
ttacttgcat aaataatatt ttcacttagt acaggctatt aatataagta atgagaattt 120
aagtattaac tcaaaaaaag atagaggctc caaacttttc taagaaatta atgcattttc 180
aaagtaataa tataatcaat ctgtaagtca aaagtaattt catattcatt gccaaattt 239

<210> 263
<211> 376
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(376)
<223> n = A,T,C or G

<400> 263
aaaaaaaaaa aaaaaaaatt ccttgtngtt tnttagagga aaaaaagaaa aaccccaact 60
tttancactg atactacata ttgctctgtt aaagaatttt ctctgccaaa aaaaagaaaa 120
aacaaaaaaa cgcttaaagc tggagtttga cattctgctt tcagatgctg tctttttatt 180
agtgagtgat gatggtttgc taataatcaa taggtaataa ttttttgtaa tcccatcaag 240
tggctccata tgtttctgct ctctcgtgac tgtgttaatg tttaactgtt gtaccttaaa 300
gccgaaatca gtaactatgc atactgtaac caaggtattg ggcttacaga gttgtttgtt 360
gnataaagaa aatttt 376

<210> 264
<211> 207
<212> DNA
<213> Homo sapien

<400> 264
aaattagcat tccacaaata tacaggtaat ttaataatta ttgtgcatga atacatacac 60
aatgcttata tatacaaatt ccagtttgtt ttcatgtgct ggcaagggat ttgtatacaa 120
tcataagctg tgttcatatt ggtcccattg aatattcaca atacaaaagc acaaaagaac 180
cattgattta caaaaggaaa tctattt 207

<210> 265
<211> 388
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(388)
<223> n = A,T,C or G

<400> 265
naactgcact ttatttgtta ctgtaacatt nttttttaac tgatcaacca taagcatgca 60
aaagnccnct gaaactgctt ccactgcctg ttgtatagaa atgggtaaat tataaaggtg 120
attcaatttg gagctccttc ctttttata gcacttctaa gctgtgtgcg cgacacacac 180
cacagaggta ggaaggacca cctttaataa attatcttct taatcgcaga gaatttctga 240
agataaaact gacaaaatgc taaaccaagg ctttgatgag tcccaaagga ccacagatcc 300
atcggctcct atttgaagaa ttcatcccct gtagtgttct agcctttgta gggcactgga 360
ttacaagatc caccagggct ctgaacaa 388

<210> 266
<211> 616
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(616)
<223> n = A,T,C or G

<400> 266
aaatacagag tcaaaagatg atttataaaa tntaaaacat tttctgcttg gccgtatttg 60
aagacaagct gaatacatat ctatgttctg aataagtcca ctatggatat atataggaag 120
agatatacat atatccatcc acagatacac acacacatat atatttctgc atgtatatat 180
acataattct ttctatagtt acaggaaata cttcttctat aattctgatt ttgactccca 240
tcctccacca tttactcatc cactcattac ctaaatcttg gctttctttc ctatattgta 300
aataatccat ccaaacttct agccagtact gtcaggaggg ttcttgctcg agtgagctgt 360
taatactatt ttccactgac aacttctgca catcgaggac acagtgtatc tgaagactcc 420
gctgtatact tccaacaacg ggggcatttt tctttcgtag tcggcatgac aattacttta 480
taggaagact cttcacgaat atcaccacct tctaagttga tgaggaattt ccctttaagc 540
tcgattacat ctgcagtcat ctctcgtggt tcctgaccag taaagttgac tcagaagcca 600
tcattaattc attcaa 616

<210> 267
<211> 341
<212> DNA
<213> Homo sapien

<400> 267
ccattatgta tgtattttct tgaaaaatac ttatttcagc tacttatttt taatagttac 60
ttattcttgt tgtattgtca tttgagtttt gtatatattt ttgatattaa ccccttgtca 120
catgtataat ttgcaaatat tttctccctt tttttagttg tcacattctg ttcattgtat 180
cagattctgt gcagcagctt tttaatttga agtgatctga ctgacttgtt cttcctttttg 240
tgtcctggga tatttaggtt aaatcaaaaa acttgctgcc cagaccaatg ttatggggct 300
ttcactctat tttttggtag tagtagttta agagttttag g 341

<210> 268
<211> 367
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(367)
<223> n = A,T,C or G

<400> 268
ttgtagattg gaatagcaaa agtgaatgct ntgaccaaaa tttttgccct cctaaataaa 60
gacgtntcct tctagagagc aaatctatca taaaatgtca aaactagaag agaataaaat 120
gaaaggaaaa aacctagaaa aatatcctaa aatatcaaat gcagtcattt ctaaatataa 180
gccataatta tagctttacc tattgttctt attgttccta tgctgcttct acaatgttac 240
atcaactata cttagcttta ctctcccaaa atcttggtga tgaagccttc tgagtgtgct 300
ttccaatgtg ccagaaccag aagggcattc caaggcttcc ccacatttcc tccatttacg 360
gagacag 367

<210> 269
<211> 270
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(270)
<223> n = A,T,C or G

<400> 269
caaatctctc cctcactaga cgtaagccnt ttnctcactc tctcaatctt atgcatcata 60
gnaangcngn tgaggtggat taaaccaaac ccagctacgc aaaatcttag catactcctc 120
aattacccac ataggatgaa taatagcagt tctaccgtac aaccctaaca taaccattct 180
taatttaact atttatatta tcctaactac taccgcatcc ctactactca acttaaactc 240
cagcaccacg accctactac tatntcgcac 270

<210> 270
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 270
ctgaatcatg aataacacta tataatagag tntaaggaac acaagcatta gatgtgatcc 60
ttgccccata cccttagatt atgtcagact aaagctgaca attctgccag gctctgaacc 120
cctagtgccc ccaacccaaa tcttggaagc aaagaatatg ccctgtcata caactttgta 180
caagttgtag taaaacaaag cttaagtttt ctcatctttc tacagcaaat ggtcagttat 240
ttaataaaca ctaaaatgct cctaagaatc cattttgagt ttgtttacca aacacattgt 300
gcaagaactg actacacaaa aagttccttt gaaatttggt ccacaaattc acttaaggtt 360
ggaaattt 368

<210> 271
<211> 313
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(313)
<223> n = A,T,C or G

<400> 271
aaatttatat aaaactctgt acatgttcac tttattattg cataaacagc ataatcttca 60
agacaanngt ttgcaaacac atgtccaatt caggaaaaaa aatttcacgt ttctcgtctg 120
gctttttctt tctttttat ttgtttggga gattcccagc tagtttcaga cttggtctgt 180
gaaggaggca cactattttg cttggtattt gacttggatt tatctgtctc ttgtagtatt 240
ggcggcactt gggaagagct cttgtcagaa tcactttttg ataagattac agatggctcg 300
gtagaagtag cag 313

<210> 272
<211> 462
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(462)
<223> n = A,T,C or G

<400> 272
aaaaaacatt tattttaata agactattgc naacacatta aaaaaactaa atagtaatat 60
tacaaaatct atatacttgc acatttagta tttgtcaatg tgccagaggt tttcttcatg 120
aaatttgact tctttgaagt gaaggctttt ttctatcatc tcttatagct ctgactgaat 180
aagtcttaat gctttcttca tgttttctat caataggggt aaatcccgag gctcatatgt 240
gtacaatctg ttagagtatc ttccagctat gtcagctcta actgttaaag aagggtctac 300
aaacatgatt ctaggcacat attgcccatc aggtgataaa ttcttatcag tggtttcatg 360
cataaggttt agcatgatga acttattctg agccatttct tgtatttctt cattttgggc 420
aaatactttc tttagtgctt gagagtattg acaatcctcc ag 462

<210> 273
<211> 282
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(282)
<223> n = A,T,C or G

<400> 273
ctgatcaaag catgggatat tttaatagtn ttatacataa tatttttaca tagaaaactt 60
tacatnncat ttcatattat ataattctgc ttattctttc aaaaatttat acatccattg 120
ggcaaggaat ggttttcatt aaattaccaa tattaaatgc acttaatcat tgtgtatagg 180
ttaaaccaaa gtaactatta actaactttt aggcatttta aggaggtaaa acatacattt 240
tacacataag tatttgatgc aaatatgcag ataaaatttt tt 282

<210> 274
<211> 125
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(125)
<223> n = A,T,C or G

<400> 274
cagccctaga cctcaactac ctaaccaacn ttncttaaaa taaaatcccc actatgcaca 60
ttnaatcnct ccaacatact cggattctac cctagcatca cacaccgcac aatcccctat 120
ctagg 125

<210> 275
<211> 528
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(528)
<223> n = A,T,C or G

<400> 275
aaagctgtgg aaaagcttta ttatagattt ttntacagaa ttaaaaaagt tcaaacaata 60
ataagccngg aaccacaaat aattaaaagg aaacacagca atcccataaa caagcattct 120
ggcatctgtt agaaattttc cctcaaatta tgaaatgtag ctctccatgc tttccaatga 180
ttgttataat acccacaaat atctgtgatt tcagtggaat actttaacaa aagttttctt 240
tttaaggcat gatcctgatt cattttttct tcaatatctc agtcatttca ggaactacct 300
taaataaatc tgcaactatt ccataatctg ccacttggaa aattggagct tctgggtctt 360
tattaattgc cacaattgtc ttgctgtctt tcatcccagc taaatgttgg atggctccag 420
atattccaac agcaatataa agttctggtg ctactatttt tcccgtctgn ccaacttgca 480
tgtcattggg aacaaagcca gcatcaacag cagcacggga agcaccaa 528

<210> 276
<211> 420
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(420)
<223> n = A,T,C or G

<400> 276
aaatgtcttg tttcccagat ttcaggaaan tttttttctt ttaagctatc cacagcttac 60
agaaacctga taaaatatac ttttgtgaac aaaaattgag acatttacat tttctcccta 120
tgtggtcgct ccagacttgg gaaactattc atgaatattt atattgtatg gtaatatagt 180
tattgcacaa gttcaataaa aatctgctct ttgtatgaca gaatacattt gaaaacattg 240
gttatattac caagactttg actagaatgt cgtatttgag gatataaacc cataggtaat 300
aaacccacag gtactacaaa caaagtctga agtcagcctt ggtttggctt cctagtgtca 360
attaaacttc taaaagttta atctgagatt ccttataaaa acttccagca aagcaacttt 420

<210> 277
<211> 668
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(668)
<223> n = A,T,C or G

<400> 277
ccagggtggc tctgatatag cagccctggt ntattttcga tatttcagga agactggcag 60

atngcaccag accctgaatt cttctagctc ctccaatccc attttatccc atggaaccac 120
taaaaacaag gtctgctctg ctcctgaagc cctatatgct ggagatggac aactcaatga 180
aaatttaaag ggaaaaccct caggcctgag gtgtgtgcca ctcagagact tcacctaact 240
agagacaggc aaactgcaaa ccatggtgag aaattgacga cttcacacta tggacagctt 300
ttcccaagat gtcaaaacaa gactcctcat catgataagg ctcttacccc cttttaattt 360
gtccttgctt atgcctgcct ctttcgcttg gcaggatgat gctgtcatta gtatttcaca 420
agaagtagct tcagagggta acttaacaga gtatcagatc tatcttgtca atcccaacgt 480
tttacataaa ataagagatc ctttagtgca cccagtgact gacattagca gcatctttaa 540
cacagccgtg tgttcaaatg tacagnggtc cttttcagag ttggacttct agactcacct 600
gttctcactc cctgttttaa ttcaacccag ccatgcaatg ccaaataata gaaattgctc 660
cctaccag 668

<210> 278
<211> 202
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(202)
<223> n = A,T,C or G

<400> 278
aaattggtat cgacggcaac caggggaagn tnctaaactc ctaatctatt ctggatccaa 60
ttngcnaagt ggggtcccat caaggttcag tggcagtgga tctgggacag atttcactct 120
cacgatcagc agtctgcaac ccgaagattt tgcaacttac tactgtcaac agagttacat 180
gtccccgtac acttttggac cc 202

<210> 279
<211> 694
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(694)
<223> n = A,T,C or G

<400> 279
ctgtacttgg acaaaataag ttaattctat ttggttgtcc attaaagttt tatgtggcta 60
tgnacccact ggagctaaaa attggctttt aactgtttcc aaatcagaac tagcagagga 120
gagaagtaaa taaagccaat ggcactccct tcagaggctc aaaatggtta gattttgatg 180
cagatttaac cttagcgagt ttcagtcagt ccatttagat gatcctgtag gttcatacaa 240
atacactgaa ccgttggttt aacttctctt ccttcctcaa agtttatgat aaagagactc 300
atccctgtat tgggagtgac tgacataagt tcagatctgc tcagagtggc tggtaaggaa 360
cacttaaggt cagtcagaaa ataatcaaac agacttctca tgtaagcacc gtgactcaca 420
actaagacac tggctgctaa tcctggaata ccgctgtctg aattaacttt agagctgtga 480
ttttttccta aaggaaatat ctctgccaaa gaagtttcca gacagntgct tgggagatcc 540
ttggggaaaa ctggtctttt tgatccggtt ctttcangan taggtngaca aaagaaatnc 600
aaaaaagnct atcccacgcn tttntcacct gggcccagcg gnnctcctcc nggggggggn 660
aaacacangg gactcttccc ngggctngct tnng 694

<210> 280
<211> 441
<212> DNA
<213> Homo sapien

<400> 280

```
aaaaaacttc catgcaactt ctggtttatt gtttggcaac tccacatgat aaaaaaataa     60
aaacagccca accgagtttc ggaattaagt attcttctag taagtgattc aaacttgtaa    120
tatttgccac aggactgact tatttattta ctagctagaa gctcttaagt tcacttgttt    180
atcagggcat atacagaagg gtttgttaaa actcgatgtt aactttacaa ctttctgacc    240
tggtgcatga attctcaagt actgtatttc actgtgttgg tgtgtctgat ggaaatttcg    300
aggtggtccc acaaaaatat tttatgtagt gtgccttcaa agagaaccat ttatttctct    360
tcacttatcg tcccacaaag tcacatttgg tggtggtcag ccaagtcgca tctggtctag    420
ttttactctt gtcccaattt t                                              441
```

<210> 281
<211> 398
<212> DNA
<213> Homo sapien

<400> 281

```
aaatttgtta ggtctgaaga atctaaaact gttaatttaa cccttaactt gtgcctagaa     60
actacagcac atataaaata tgtaaacacc agcctgttgc tgtacttttc tgcttatttt    120
acagcctcaa atatttctca ttatcttgtc acttagttct tcatgtttct ccttctgact    180
tttaataatg gtaataggaa aacaaaaccc aaagcttttc agaacttcag tgtgaggttt    240
cctattttga caagttaact tgtaaatact caggttttac gatgtataat ttacctaata    300
gaccaaacta actcatggag atattttgaa ctattattta ggtacaaact ttataaagaa    360
tgttagtatg tcataaaata taacattaca gcttattt                            398
```

<210> 282
<211> 226
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(226)
<223> n = A,T,C or G

<400> 282

```
aaaacaatat tctctttttg aaaatagtat naacaggcca tgcatataat gtacagtgta     60
ttacnccaat atgtaaagat tcttcaaggt aacaagggtt tgggttttga aataaacatc    120
tggatcttat agaccgttca tacaatggtt ttagcaagtt catagtaaga caaacaagtc    180
ctatcttttt ttttggctgg ggtgggggcg cccaggccga ggctgg                   226
```

<210> 283
<211> 358
<212> DNA
<213> Homo sapien

<400> 283

```
aaacaaaaat actcaagatc atttatattt ttttggagag aaaactgtcc taatttagaa     60
tttccctcaa atctgaggga cttttaagaa atgctaacag atttttctgg aggaaattta    120
gacaaaacaa tgtcatttag tagaatattt cagtatttaa gtggaatttc agtatactgt    180
actatccttt ataagtcatt aaaataatgt ttcatcaaat ggttaaatgg accactggtt    240
tcttagagaa atgtttttag gcttaattca ttcaattgtc aagtacactt agtcttaata    300
cactcaggtt tgaacagatt attctgaata ttaaaattta atccattctt aatatttt      358
```

<210> 284
<211> 288
<212> DNA
<213> Homo sapien

<400> 284

aaaacttttg ttaagaaaaa ctgccagttt gtgcttttga aatgtctgtt ttgacatcat 60
agtctagtaa aattttgaca gtgcatatgt actgttacta aaagctttat atgaaattat 120
taatgtgaag tttttcattt ataattcaag gaaggatttc ctgaaaacat ttcaagggat 180
ttatgtctac atatttgtgt gtgtgtgtgt gtatatatat gtaatatgca tacacagatg 240
catatgtgta tatataatga aatttatgtt gctggtattt tgcatttt 288

<210> 285
<211> 629
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(629)
<223> n = A,T,C or G

<400> 285
cctaaaagca gccaccaatt aacaaagcgt ncannctcaa cacccactac ctaaaaaatc 60
ccaaacatat aactgaactc ctcacaccca attggaccaa tctatcaccc tatanaagaa 120
ctaatgttag tataagtaac atgaaaacat tctcctctgc ataagcctgc gtcagattaa 180
aacactgaac tgacaattaa cagcccaata tctacaatca accaacaagt cattattacc 240
ctcactgtca acccaacaca ggcatgctca taaggaaagg ttaaaaaaag taaaaggaac 300
tcggcaaatc ttaccccgcc tgtttaccaa aaacatcacc tctagcatca ccagtattag 360
aggcaccgcc tgcccagtga cacatgttta acggccgcgg taccctaacc gtgcaaaggt 420
agcataatca cttgntcctt aattagggac ctgtatgaat ggcttcacga gggttcagct 480
gtctcttact tttaaccagt gaaattgacc tgcccgtgaa gaggcnggca tgacacagca 540
agacgagaag accctatgga gctttaattt attaatgcaa acagnaccta acaaacccca 600
caggtcctaa acttacccaa accctggca 629

<210> 286
<211> 485
<212> DNA
<213> Homo sapien

<400> 286
aaatgtactt gctcagctca actgcatttc agttgtatta tagtccagtt cttatcaaca 60
ttaaaaccta tagcaatcat ttcaaatcta ttctgcaaat tgtataagaa taaagttaga 120
attaacaatt ttattttgta caacagtgga attttctgtc atggataatg tgcttgagtc 180
cctataatct atagacatgt gatagcaaaa gaaacaaaca aaagccagga aaacactcat 240
tttcgccttg aatatgtaaa tgggattaat tttgtcctgt gccttatgtg gaaaggaact 300
tctttggttt tcctttttttg ttctggtgga agcatgtgca ggagacatat catccaaaca 360
taaaccatta aaatgtttgt ggtttgcttg gctgtaattt tcaaagtagt taattgagga 420
caaagggtaa tgcagaagtg atagctttgg tttgctgagt cttgttttaa gtggccttga 480
tattt 485

<210> 287
<211> 340
<212> DNA
<213> Homo sapien

<400> 287
cctggagtcc aataaccacc ccctcatacc acaccctgtg catacaccag ccaagccttt 60
cctggtctgg gaagggaaga gaaaaaagac gcaggccacc tggggggttct gcagtctttg 120
gtcagtccag ccttctatct tagctgcctt tggcttccgc agtgtaaacc ttgcctgccc 180
ggaggcagga ggcccagctg gacctccgag ggccatgagc aggcagcagc catcttggcc 240
tcaagcttgc ctttcccttg agtccctctc tcccctcggc tctagccaga ggtgtagcct 300
gcagatctag gaagagaaga gctggggagg aggatgaagg 340

<210> 288
<211> 290
<212> DNA
<213> Homo sapien

<400> 288
aaacagtctc tcctcggtgt tctccttgtc aaactgttca tcccagtttc ctctgaaata 60
gacagcattc accagaacca gccttgtcaa tggatccact gagcccggag agagcaactc 120
cgcaatttta ccttctgtct tttcagctac ccaggtgttt atgtgttttc tggacttctc 180
tacggcgctg ataaagtcaa gctcctccat ctctgcttgg tagaattttt ggcaggaatc 240
tctaaaagat gagaggaaat cacaagactt ttccccaaag agcctgttgg 290

<210> 289
<211> 404
<212> DNA
<213> Homo sapien

<400> 289
ccacccacgc ttaggttccc atcacactga tgactccggg tttggcgagc acaggagcgc 60
aaacctttc acattctttc tgtgatccaa atttgttttc gtttccacca caacctccat 120
accagaatct tgcacagctt ttggtgtttg gatcatagta ccattttaat atgaaatccc 180
tgcaagttcc ttcgtctttc ggcaacttgc atatatctgt ttcagtgaga gccaatggtt 240
ctgtgctcac cattagattg atggttgaac tagaagctga ccttgctggc tgtggaggtg 300
ggggctgaga tttctttgta ctgaaacttc cgtggtaggt ggctctgacc tgagacctca 360
ggtagcagac cacagccaca tggtatgtct gcccagcgag cagg 404

<210> 290
<211> 384
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(384)
<223> n = A,T,C or G

<400> 290
ccaggcgctc cttgtcggca tcagggaggg tggccttgaa ctgctcatgg gctgtggtca 60
gtccctggat ctcctcaatg gtgtgcacaa tgaaggtgtc ctgcaggtcc tccatggccc 120
cctccatcca gttgttgaag ggtgcagccc gcttggcata ctccaagtac agctggtcaa 180
tggtctccag cagtttctcg gtccgctcca gagcttccct tcgcttctga gttagggccc 240
ccagattgtc ccactggtca cagatctttt ggcaacgggc gttgacactg ggtgagtcat 300
aatantccag ctcattgagc tcctgtgcga tggcggcaat ctgctccaca cggtcctggt 360
gggcagccag gccactctcg aagg 384

<210> 291
<211> 278
<212> DNA
<213> Homo sapien

<400> 291
aaagtttatt tttactattt ctttatcact ttattgtatc atcaccattg gtttcataat 60
gtaaatacta tatgttgaac aaattaaatg tcaaaatttt ttattaccat agtccatgtt 120
aatagtgggg ctttcaggtg tttagagatt ttttttgttg ttgttaacat tcattgcaaa 180
agtactagat ggtgtataac tctagagttg aattttaagg gattccctaa tatgtatact 240
atctttttat ctgaagtaat aaataaacaa tgatcttg 278

<210> 292

<211> 177
<212> DNA
<213> Homo sapien

<400> 292
ccttggcccg gtcattcttg tccagtttga taggttcagg aaattcgttg tacagctcca 60
cctccgtttc ctgcttaagt gcattccgtg caatcgtctg gaacgcctgc tccacgttga 120
tggcctcctt ggcactggtc tcaaagtagg gaatgttgtt tttgctgtag caccagg 177

<210> 293
<211> 403
<212> DNA
<213> Homo sapien

<400> 293
aaaaagaagg acttagggtg tcgttttcac atatgacaat gttgcattta tgatgcagtt 60
tcaagtacca aaacgttgaa ttgatgatgc agttttcata tatcgagatg ttcgctcgtg 120
cagtactgtt ggttaaatga caatttatgt ggattttgca tgtaatacac agtgagacac 180
agtaatttta tctaaattac agtgcagttt agttaatcta ttaatactga ctcagtgtct 240
gcctttaaat ataaatgata tgttgaaaac ttaaggaagc aaatgctaca tatatgcaat 300
ataaaatagt aatgtgatgc tgatgctgtt aaccaaaggg cagaataaat aagcaaaatg 360
ccaaaagggg tcttaattga aatgaaaatt taattttgtt ttt 403

<210> 294
<211> 305
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(305)
<223> n = A,T,C or G

<400> 294
aaagcaatct ggcatggtgt cctgtagtga agcagaggat cataacataa gtaaactctc 60
tatgggtgga agttggagag aaggacattt tggctttgta catgaaaaga ctctccagat 120
agaaacagat tctgcccata agtgaaataa aatgctttgt gggggtaatg agtgacttat 180
agtattcagg cagatgttac ataactgcta attaagtttc cctggattga ntttanncaa 240
anaattgaaa gtngattttg gtcangtgtc agnaaactac tgcctataaa cccatatcnt 300
accca 305

<210> 295
<211> 397
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(397)
<223> n = A,T,C or G

<400> 295
cctatctggt tggccttttt gaagacacca acctgtgtgc tatccatgcc aaacgtgtaa 60
caattatgcc aaaagacatc cagctagcac gccgcatacg tggagaacgt gcttaagaat 120
ccactatgat gggaaacatt tcattcccaa aaaaaaaaaa aaaaaaaaat ttctcttctt 180
cctgttattg gtagttctga acgttagata tttttttcc atggggtcaa aaggtaccta 240
agtatatgat tgccgagtgg aaaaataggg gacagaaatc aggtattggc agtttttcca 300
tttncatttg tgggngaatt tttaatataa atgcggagac gtaaagcatt aatgcnagtt 360

aaaatgtttc agtgaacaag tttcagcggt tcaactt 397

<210> 296
<211> 447
<212> DNA
<213> Homo sapien

<400> 296
ccatcctcga tgttgaagtt gtcgtggggc ccgaagacgt tggtggggat gacagcggtg 60
aaggtgcagc cgtactgctg gaagtaggcc ctgttctgca cgtcgatcat cctcttggca 120
tacgagtacc caaaattgct gttgtgggga ggcccattgt ggatcatggt ctcatctatc 180
gggtaggtcg tcttgtcagg gaagatacag gtggacaggc aggacaccac cttgcgggcg 240
cccacctcga aggccgagtg caggacgttg tcgttcatgt gcacgttttt cctccagaag 300
tccaaattgt atttgatatt ccggaacagg ccccccacca ttgcagcaag atggatgacg 360
tgtgtgagtt ggaccttctc aaacagggcg cgggtctgtg ctgtatccgt gagatcggcg 420
tctttagagg agacaaacac ccagtcc 447

<210> 297
<211> 681
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(681)
<223> n = A,T,C or G

<400> 297
aaataacagc atgtaaaata ttaaaataca agctttcaaa aataaataca taaataagta 60
gaaccctcgt aagaaatagt caaacacatt aagtcctttc cagctgtccc tagaaagctg 120
ctgttctctt tttcattttc agctctggta agggcaggga ccaccctgca ggaagtgtca 180
atgatacgct gataagcttc ttacttctct cctgtcagtt ggtgctcccc ctgtgatgag 240
aaaagggtta ctgttgcagg tgctaaggaa ggctgctctt ctgtcactct gaagttgctt 300
ggagggatgt ccccatgcag actctctccc agccctccac tcagggaagg tctgtctgta 360
cccactgcct tctatagcag aaaacttgca ctcctgaatg cttttttttt ttttcaagaa 420
agaagnggct gnggactcaa ctagattctt ggtttgaaaa agccaaaaca tattggtcac 480
tgattgtcac attgggttag aaatgtccat tcatgatctc ccttaagctg cacacaaccc 540
tatgaaataa ctaccattat ctaccctatt ttgctaaagc tcaaagagat taaataatgt 600
tgacagggat cttagccttg aactcactga aggngttact gcaaagttct gctcttcacc 660
aagaaggntt acaggccaaa g 681

<210> 298
<211> 353
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(353)
<223> n = A,T,C or G

<400> 298
cctggcttaa gaccagacat ttgaagaagg ctccaggcag ggaaaggaaa ggagaggcca 60
gccccacnct gnccccctccc tgcccccacg tctccagcaa cacaaggcgg ccagtggacc 120
gtgaaccatt tatttccaaa ctataaagaa acctgctctc tgagaaaana cactgcccag 180
gngatgaagc tccagcccct ggaggtccaa aacccagtcc aaactcagtc cctttagaaa 240
gctgctgtgc cttggaaatg annntcggnt gtcanagcct gggaagtggt gggaagaacc 300
agcccactcc cctctcctgc tgcgattcca gcgcncgttg ggnccagatc tgg 353

<210> 299
<211> 560
<212> DNA
<213> Homo sapien

<400> 299
aaagttcaag gactaacctt atttatttgg gaaaggggag gaggaaggaa atgatatggt 60
acccagacac tgggctaggc tgcaacttta tctcatttaa tactcccagc tgtcatgtga 120
gaaagaaagc aggctaggca tgtgaaatca ctttcatgga ttattaatgg atttaagagg 180
gcatcaatca gctcaactca agatttcata atcattttta gtatttagat tgtgcctcaa 240
agttgtagta cctcacaata cctccactgg tttcctgttg taaaaacctt cagtgagttt 300
gaccattgtg ctcttggctc ttgggctgga gtaccgtggt gagggagtaa acactagaag 360
tctttagtac aaaactgctc tagggacacc tggtgattcc tacacaagtg atgtttatat 420
ttctcataaa gagtcttccc tatcccaagg tcttcatgat gccagtagcc atatatgata 480
aattatgttc agtgataact tagttatcag aaatcagctc agtggtcttc cccgccatga 540
ttcacatttg atgagttttt 560

<210> 300
<211> 165
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(165)
<223> n = A,T,C or G

<400> 300
aaaaactaca taggggtgtg tgtgtgtgtg tatgtttatt ttatacacac atatttgtat 60
attctaatat attactaagg caattttaat gaattaccat gtatataaaa aaatatctgn 120
cacttggcac acaggtttgt atgtatgtgt atatatatat gtatg 165

<210> 301
<211> 438
<212> DNA
<213> Homo sapien

<400> 301
aaaatatatg tatttaaaaa caaaaagcaa cagtaatcta tgtgtttctg taacaaattg 60
ggatctgtct tggcattaaa ccacatcatg gaccaaatgt gccatactaa tgatgagcat 120
ttagcacaat ttgagactga aatttagtac actatgttct aggtcagtct aacagtttgc 180
ctgctgtatt tatagtaacc attttccttt ggactgttca agcaaaaaag gtaactaact 240
gcttcatctc cttttgcgct tatttggaaa ttttagttat agtgtttaac tggcatggat 300
taatagagtt ggagttttat ttttaagaaa aattcacaag ctaacttcca ctaatccatt 360
atcctttatt ttattgaaat gtataattaa cttaactgaa gaaaaggttc ttcttgggag 420
tatgttgtca taacattt 438

<210> 302
<211> 172
<212> DNA
<213> Homo sapien

<400> 302
ccaaaacagg agtcctgggt gatatcatca tgagacccag ctgtgctcct ggatggtttt 60
accacaagtc caattgctat ggttacttca ggaagctgag gaactggtct gatgccgagc 120
tcgagtgtca gtcttacgga aacggagccc acctggcatc tatcctgagt tt 172

<210> 303
<211> 552
<212> DNA
<213> Homo sapien

<400> 303
ccagcctgtt gcaggctgct tcgtagcggg cgtcggctgc ggacttccct tcccgggtct 60
ggatcttttc atcctaccag atgagaaagg gaatgagtga atggagtgac cccgcaccct 120
gtcactttcc tgagacatga ctgccaggaa gaagagctgc tctggtctcc atcagggctg 180
gcaggacaaa ctgaccagtg agtcagtagg cagagttcac actgaaaaag ggcacaaggg 240
ctgtcccaca atgggaggaa atggggtctc agaacttcta cttctctgaa aactaagaca 300
caattgggac aaccaccacc cccgtgtgag atttctcacc tcgagacagg acaagatgaa 360
gttcacggct tcttctgggg taaagacctt gaagagccca tcacaggcca acaaaatgaa 420
cctacaacac cagggagaaa tataaacggg ttttaggccc aaccaaaaaa taaaaaataa 480
aaaaagggcc tggagatgga gataaaataa atatttgtcc aactattcaa aggctaaggt 540
tttttttct tt 552

<210> 304
<211> 601
<212> DNA
<213> Homo sapien

<400> 304
cctttgattc ttggtagtac attgcatgta aaatgtttat aagaagctac ttttccttca 60
tgggaagaaa ttcccacatg agattcataa attcttagac tccgtggctt ctttggtccg 120
gaatgcttaa actcatatga gtgttctgga tcccagtgta tccaatcata attcacatta 180
tcaccttcac gaaccacata ctttgcccac ggtgaaatac gatacaagat ctctccgctt 240
ttactagtaa taactacctt taatttggat ccatgaggca cgagtacaga tttattctgc 300
tttggtggga tatacagctc ccattttcca taatccagtt ttttgtatgg gtacgaaaat 360
ggattccaac cattaaaatc tccagtaaga aaaactcctt ctgctcccgg ggcccattct 420
ttgcagtata aaccaccatc agcacatctg tggacgccaa atgattcata gcctctggaa 480
aacttatcaa taccaccttc atttctccca atgttcttca aaatttggct aaactgctta 540
tacctgcgct ggaagtccac ggcgtagggc ttcaagtacc ggtcgatctc caggagtctg 600
g 601

<210> 305
<211> 401
<212> DNA
<213> Homo sapien

<400> 305
aaataacagc atgtaaaata ttaaaataca agctttcaaa aataaataca taaataagta 60
gaaccctcgt aagaaatagt caaacacatt aagtcctttc cagctgtccc tagaaagctg 120
ctgttctctt tttcattttc agctctggta agggcaggga ccaccctgca ggaagtgtca 180
atgatacgct gataagcttc ttacttctct cctgtcagtt ggtgctcccc ctgtgatgag 240
aaaagggtta ctgttgcagg tgctaaggaa ggctgctctt ctgtcactct gaagttgctt 300
ggagggatgt ccccatgcag actctctccc agccctccac tcagggaagg tctgtctgta 360
cccactgcct tctatagcag aaaacttgca ctcctgaatg c 401

<210> 306
<211> 313
<212> DNA
<213> Homo sapien

<400> 306
aaactgacta tggattcctt gaaggtctgg cagttgttga tgatggcgat catgtactga 60
acgtagcagt gagggtgctg ccgattcctc aggtgctctt ctttatacag ctgcgcttca 120
tctttatatc tgaggacaga caggcttcgg tcagacagca ctaagggcaa catggagctg 180

tttcaaatgc cacgctgacg tcacgcctgg cctgaaattt cacatcacta acatctgacc 240
ggatgagcct ctaaaaataa aacaatcttt agacgatcca gactaatgga aggacagaga 300
ggttgattac ttt 313

<210> 307
<211> 366
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(366)
<223> n = A,T,C or G

<400> 307
aaagatgctg ntaatgaaca ttacggacaa ttcatggtgt ggctagttgg taacacttca 60
gctgattttt cttatgagat ggaaaaaaaa aatcagccaa gtaagggcac atcttcactt 120
catttataag tcagcatcca aggtaaaaga attctctgtt ggacttgaca tcactcccat 180
cctctgatac tcgcctactc tcttctcaaa gaagttagnt ctttccttcc antgaaatat 240
tctcataaaa gtcaaatggg ttctctactc tgaaaacctt gctaaaaccc aattccagca 300
taagtttgtc tgncacaaac ncaatgnatt gcttcattaa antgcaattc atcccaatga 360
gcttcc 366

<210> 308
<211> 534
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(534)
<223> n = A,T,C or G

<400> 308
ccagctatca gctgatcgtc ttctgtctgg acgctcgtcc tgcttctgac atcaaaatct 60
tctgtctcaa agtcagagtc atccaactcc tcaggggtcc ttatcatcag cactgctttc 120
ctgatgtccc ggatgccatc atataccagg cgggaagcat cgataaactc attctcatcc 180
atgggctggg cagggtccga gctgagggct tccacggctg cttctacttg ctcagtaaaa 240
cgtggcatga ctgtgttgga gagcagctta gtggcttcca gaaccttctc tgtgtagact 300
cctggctcat agtcgtccat ctctgaggtg actacgtgaa tgacccgggc tgcccggcct 360
cgaattgcac cagctgtgcg gccaggccat ccacatcctt ctcttggaga gcaatgacac 420
atttggtcac atcttccaaa atgtgattct ctgagacagc caagaagtca tcaatggaag 480
taatgncatc gacagcatct gtgagaacac cgacttgttt ttccattgnt cttt 534

<210> 309
<211> 164
<212> DNA
<213> Homo sapien

<400> 309
catactcctt acactattcc tcatcaccca actaaaaata ttaaacacaa actaccacct 60
acctccctca ccaaagccca taaaaataaa aaattataac aaaccctgag aaccaaaatg 120
aacgaaaatc tgttcgcttc attcattgcc cccacaatcc tagg 164

<210> 310
<211> 131
<212> DNA
<213> Homo sapien

<400> 310
aaaaatcatt tatctttcgg tgcttcaaca tgatgccaaa caaaaatcta ctgaataaaa 60
atagcaagga agggaatcaa acatttataa gatatattta ttatttttct gaccaaagtg 120
caatgatttt t 131

<210> 311
<211> 626
<212> DNA
<213> Homo sapien

<400> 311
cctatgtgcg ccagtttcag gtcatcgaca accagaacct cctcttcgag ctctcctaca 60
agctggaggc aaacagtcag tgagagtgga ggctccagtc agacccgcca gatccttggg 120
cacctggcac tcaagcactt tgcacgatgt ctcaaccaac atctgacatc tttcccgtgg 180
agcaacttcc tgctccacgg gaaagaggtc gatggattta cccctggacc cataagtctg 240
ttcatcctgc tgaagtcccc tccccattgc tccttcaagc caaaactaca ctttgctggt 300
tcctgtcccc tctgagaaag gggatagaaa gctccttcct ctatgtcctc ccatcgagat 360
ctgttctggg gatggagctt ccaacttcct cttgcagcag gaaagaatgc tgctcaccct 420
tctgtcttgc agagtgggat tgtgggaggg attggcagcc ttcttctcca ccacctgtcc 480
agcttcctcc tggtcagggc tgggaccccc aggaatatta tgttgccgtg tgtgtgtgtg 540
tgtgtgtgtg tcttctttta gggagcagga gtgcatctgg taattgaggg tagatgttgt 600
gtgtgctggg gaggggtcct tctgtt 626

<210> 312
<211> 616
<212> DNA
<213> Homo sapien

<400> 312
aaaccaaaga aattaagaaa aaagacttca ttgcttgaat gacgcgaaca gctgtctgag 60
tcacctagac tttaacacca cctgggggccc tgggaatgac gctgacgaga gatctgcaca 120
tagtaggcgt gggctccaaa tgtgctcatc agctgacttc acatcctcac aagtcagcct 180
cagatatgac ccaagggata cgtaccatct cttcttgaaa cagcgtgtca aattatatat 240
atgtatgcaa aaaagagtaa tgtactaagc aaaccaagtt tcgtcttttt cttctgaatc 300
tggttttaat gtgacctgtc atccccatct ttcgaattta tgagctccat cttctctaga 360
ctgttaactt cttgaggaaa acatgctatt ttaccacctt tcactgctga atccctagcc 420
cttaagcaca gtctctggca cagaataaat acgaaatgaa tgagtgaatg aatggatgga 480
tgggtgaaga gaaaaggcaa tgcacaagat ttacctatca aaatccacca atggtcctta 540
aaaatggttt tgtcagtaga gatgctgaat atattcatat aatacattta tttcaatact 600
attaagaatt ctagtg 616

<210> 313
<211> 553
<212> DNA
<213> Homo sapien

<400> 313
aaaaaatggc agcattgtac ttgaatcaga aagcttactg ggatttcctc atcgaaagta 60
gagattgcag ctaatcctag taccttttgt tagtaattac ttaaggcaca gtgcaaagtt 120
gaaggactgt tttggtacaa actcaagcca gctacatgta tgcttgcctt ggtatccttg 180
ctagagcaca tgcgggtata ataccgtatt atacacaaca aggccacccт gttgtatctg 240
tgttacaatt aaacatcagt cccagaaagt gaaccctagt catttattat aggtgcccac 300
ctctgacttg gaacaaaatg ccactccatt catgttcatt tttgtcctgg agaggattta 360
tttcctaaaa gattctgaaa gccaacaaat caatgtagtt cttcatagag aacttaagag 420
taaggctcaa aatggcctca aaatgggctt cttggatgac ttccaacagt gactggcctt 480
ctcaacactg cagatgtctg agcactacca taacctaacg aagtgaggaa ggaggaggca 540
aattggtatt ttt 553

<210> 314
<211> 330
<212> DNA
<213> Homo sapien

<400> 314
ccagcgactc cagcggtggc agcaggcagt gcacgtactc tgggcctccc accagggtag 60
tgaaggttcc cagctgttct gccagggcca ggaggacctc atcttcatca tagatggtat 120
ctgtaaggaa aggcagaagc tcacttcggg tcctttcaac cccaagggcc aaggcgatgg 180
tggacagctt cttgatgctg ttgaggcgaa gctgaacgtc ctcattgcgg agttcgtcta 240
tgagcaccgc gatggggtac agcgagtcgt cgccgtcggc cgccgccatc ttggctccgt 300
ccctttcctg tcagactgcg gccagcgctg 330

<210> 315
<211> 380
<212> DNA
<213> Homo sapien

<400> 315
aaaaatgaca ttgcgtttag cttattgtaa gaggttgaac ttttgtattt tgtaactatc 60
tttaagccct tcagtttata attcatataa aatgcctttt gtatttaaaa taatcctatt 120
ttaatcagtg catgaaattt gctttttttaa agttcatttg aatgattatt ccttccctct 180
aaagaaatga ttttggtaat gttgagaggt accttaccac aaatcctaac tgtaagtgta 240
ttcatggtta ttttcaaaag aattatgact cttccccaaa agaatcctaa aaaacttgta 300
ataaacctat aaagctgatt tgcatattta caaaattttg aatagcaaat ataggcaact 360
catatatgta tataattttt 380

<210> 316
<211> 222
<212> DNA
<213> Homo sapien

<400> 316
aaactacaga gggttttcca gctattattt cctttagttt ctaaaagtaa cgacttatat 60
taatgtttta taaaagatag tgatgaaaaa aaggtaatgc tgaaataaag gcgcttttag 120
aaatatttaa ggacaacata aggtattaat attggaaaaa aactgtacat attttcaagc 180
acaacactga aatattgcag cagtgtttaa ctgaattgtt tt 222

<210> 317
<211> 490
<212> DNA
<213> Homo sapien

<400> 317
ccttgaatga gcgtggagag cgattaggcc gagcagagga gaagacagaa gacctgaaga 60
acagcgccca gcagtttgca gaaactgcgc acaagcttgc catgaagcac aaatgttgag 120
aaactgccta tcctggtgac tcttcttaag agaaactgaa gagtttgttc agcagttttt 180
acaagaattc gggacctccg cttgcttctt tttttccaat atttggacac ttagagtggt 240
ttttgttttt tcttttcaga tgttaatgtg aaagaaaggg tgttgcattt ttacatttcc 300
ctaatgatct tgctaataaa tgctacaata gcatcggctt cattttgggt ttttgcctcc 360
tcccactgtg tgtatgtgtg tatatgtatg ttttgaatat gttttcttta ttaaaaaata 420
ttttttgtag tttgaatatg aaatttggac caaatgataa actgcgctga gtctaaactg 480
gcaacatgta 490

<210> 318
<211> 340
<212> DNA

<213> Homo sapien

<400> 318
cctggagtcc aataaccacc ccctcatacc acaccctgtg catacaccag ccaagccttt 60
cctggtctgg gaagggaaga gaaaaaagac gcaggccacc tggggttct gcagtctttg 120
gtcagtccag ctttctatct tagctgcctt tggcttccgc agtgtaaacc ttgcctgccc 180
ggaggcagga ggcccagctg gacctccgag ggccatgagc aggcagcagc catcttggcc 240
tcaagcttgc ctttcccttg agtccctctc tcccctcggc tctagccaga ggtgtagcct 300
gcagatctag gaagagaaga gctggggagg aggatgaagg 340

<210> 319
<211> 373
<212> DNA
<213> Homo sapien

<400> 319
aaagatgctg ttaatgaaca ttacggacaa ttcatggtgt ggctagttgg taacacttca 60
gctgattttt cttatgagat ggaaaaaaaa atcagccaag taagggcaca tcttcagttc 120
atttagaagt cagcatccaa ggtaaaagaa ttctctgttg gacttgacat cactcccatc 180
ctctgatact cgcctactct cttctcaaag aagttagtct ttccttccag tgaaatattc 240
tccataaagt caaatgggtt ctctactctg aaaaccttgc taaaacccag ttccagcata 300
agtctgtctg ccacaaactc aatgtattgc ttcattagag tgcaattcat gccaatgagc 360
ttcacaggca agg 373

<210> 320
<211> 509
<212> DNA
<213> Homo sapien

<400> 320
aaaaacaaaa ttaaattttc atttcaatta agacccсttt tggcattttg cttacttatt 60
ctgccctttg gttaacagca tcagcatcac attactattt tatattgcat atatgtagca 120
tttgcttcct taagttttca acatatcatt tatatttaaa ggcagacact gagtcagtat 180
taatagatta actaaactgc actgtaattt agataaaatt actgtgtctc actgtgtatt 240
acatgcaaaa tccacataaa ttgtcattta accaacagta ctgcacgagc gaacatctcg 300
atatatgaaa actgcatcat caattcaacg ttttggtact tgaaactgca tcataaatgc 360
aacattgtca tatgtgaaaa cgacacccta agtccttctt tttaaaaatg acattgcgtt 420
tagcttattg taagaggttg aactttgta ttttgtaact atctttaagc tcttcagttt 480
ataattcata taaaatgcct tttgtattt 509

<210> 321
<211> 617
<212> DNA
<213> Homo sapien

<400> 321
ccaaggcccc ttttgcagcc cacggctatg gtgccttcct gactctcagt atcctcgacc 60
gatactacac accgactatc tcacgtgaga gggcagtgga actccttagg aaatgtctgg 120
aggagctcca gaaacgcttc atcctgaatc tgccaacctt cagtgttcga atcattgaca 180
aaaatggcat ccatgacctg gataacattt ccttccccaa acagggctcc taacatcatg 240
tcctccctcc cacttgccag ggaacttttt tttgatgggc tcctttattt ttttctactc 300
ttttcaggcg cactcttgat aaatggttaa ttcagaataa aggtgactat ggatataatt 360
gagccctctg gtccaggtct cagtttacct aatattacct cagaaaggat atggagggaa 420
gatgatcttt ttgccaggtc tgacttttct tcctgctccg ccctccatta acgctcagta 480
ccctttagca gctgacggcc ccacgttcta ctccatgctt ggcttccttt ccaactagct 540
ctttcatata ttttacttgc tagtatctcc attctctcta aagtagtggt tcttttgcc 600
cttaaactta aattttt 617

<210> 322
<211> 403
<212> DNA
<213> Homo sapien

<400> 322
aaaaagaagg acttagggtg tcgttttcac atatgacaat gttgcattta tgatgcagtt 60
tcaagtacca aaacgttgaa ttgatgatgc agttttcata tatcgagatg ttcgctcgtg 120
cagtactgtt ggttaaatga caatttatgt ggattttgca tgtaatacac agtgagacac 180
agtaatttta tctaaattac agtgcagttt agttaatcta ttaatactga ctcagtgtct 240
gcctttaaat ataaatgata tgttgaaaac ttaaggaagc aaatgctaca tatatgcaat 300
ataaaatagt aatgtgatgc tgatgctgtt aaccaaaggg cagaataaat aagcaaaatg 360
ccaaaagggg tcttaattga aatgaaaatt taattttgtt ttt 403

<210> 323
<211> 298
<212> DNA
<213> Homo sapien

<400> 323
ccagaattag ggaatcagaa tcaaaccagt gtaaggcagt gctggctgcc attgcctggt 60
cacattgaaa ttggtggctt cattctagat gtagcttgtg cagatgtagc aggaaaatag 120
gaaaacctac catctcagtg agcaccagct gcctcccaaa ggaggggcag ccgtgcttat 180
atttttatgg ttacaatggc acaaaattat tatcaaccta actaaaacat tccttttctc 240
ttttttcctg aattatcatg gagttttcta attctctctt ttggaatgta gatttttt 298

<210> 324
<211> 78
<212> DNA
<213> Homo sapien

<400> 324
ccatgggaag gtttaccagt agaatccttg ctaggttgat gtgggccata cattccttta 60
ataaaccatt gtgtacat 78

<210> 325
<211> 174
<212> DNA
<213> Homo sapien

<400> 325
ccatcatggt caggaactcc gggaagtcaa tggtcccgtt cccatctgca tccacctcat 60
tgatcatatc ctgcagctct gcttcagtgg ggttctgtcc cagggatctc atcactgtcc 120
ccaactcctt ggtggtgata gtgccatctc catccttgtc aaagagggag aagg 174

<210> 326
<211> 679
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(679)
<223> n = A,T,C or G

<400> 326
aaaactgaaa tacctcttaa aataatttga tccccagcgt ttgctctttt tgaagtaacc 60
aacttactct taaaaaggat ggntgccaag atggaaagtc ttactgggtt ttcatgttaa 120

```
cctattcttt ggacataact atgaattttg tatacaatgc acttcatgaa aagttgtggc     180
tcccccagat tgcccacaag tgtgatcttg aagtcctaaa catttgtcca tgtaagcttc     240
aaaacagcgt taactgagtt attcaagtag cagtacttaa agatacaatt cttgaagcag     300
tttcaatggt ttctgatcca aataatcagt ttctgaacat tactacttca cataatagag     360
tccatcttca gtttcttctc actttctctt tccctttttgg gtttcctttt tgtggcctga     420
ggccaccagt tctttgggta ctatcaagat acttccatca tgggtacact ggagagcata     480
gtggttggga ttgactggcc taccttggtc atctcttaat ctactaaaaa tatcatgata     540
aaggtcatgc agtttctgtt tcattatgtt aatagctttg gtacattgtg cttgctctct     600
cttaanagtt tccttctttg cttgcaagtt acatacatca tcttctaaat tcaaaattat     660
gtccattttg gcgtttacc                                                   679
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<210> 327
<211> 619
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(619)
<223> n = A,T,C or G

<400> 327

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aaaataagtt actggtaaat ggagttgcat tctatagtca cttaataaat attaacaaaa      60
tatttataac tggaacctta atgaaatgta tcatcaaatc aggtaaaagc aacttgtccg     120
cagttaccaa agcctanata cgcgttagat gcgccttttc cggcctgtgc gtctgctctg     180
gttcctctca ggcagcaaag ctggggaagg aagctcaggc aggagcctcc ccgacgccac     240
aacggcacaa gcagcagcta aagcaccgca ctttgctcta ctaacctttt acttaaatga     300
ggttttgcca aatccacatc tggaaccgcg tcacacccat ttgcaaggat gtttgttctt     360
tgatgaaact gcatctctac tgcacatgag ggctttcatt gtaggacaag aggagagttc     420
gtttattttt gtaactgttt tacatgttcc gattagttaa tcggtagctt atgtcatttg     480
ctatgcctgn agncttctaa tctctcctta ctaaaacatt acttcaaatt tgaattgacc     540
cttggttata atttatttag ccgggatttg tgtgtcattg tagagcaact ctaattcaag     600
aatagtgaca acttttaag                                                   619
```

<210> 328
<211> 132
<212> DNA
<213> Homo sapien

<400> 328

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aaatccaaat acaaaagcat agtctctgca agattttgtt ctttgaattt cttgatattg      60
taattgatta ttgataactg tcatcatgaa attatctctc aataataaga taaataaact     120
agcatatgaa tc                                                          132
```

<210> 329
<211> 854
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(854)
<223> n = A,T,C or G

<400> 329

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ccttgaggta actattgcaa aatatacagt gtaagttcag tctgatggaa accccagatt      60
catcaaggat acaaatctac agtagcccaa tggcggtttc atagtgtata atttattatc     120
aataaaatta actccgttac aatcagcatt catttcctcc aattaaaatt aagcataaac     180
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cctaggtagt aaccttctgc acatatgtat agctccgaat ttcctcactg ttcgtctggt 240
gcaaaaacaa tattcaagct tgtctgatta tgcatatttt ctttaatcat atagattata 300
tatacaatag acaagacagg actatataga taatggacag acttaaatgc ccgcattttt 360
aaggtggaga aaatgatgaa tctatgcatc cccgagaaca cttaaaattt tttttattt 420
cactgggaaa ttcttacagc tactttacaa tcataggtta acagcctagt tatacagaag 480
acatattcca ctacagagct atactctatg caactgtttt ttcccctcat aaacaacctg 540
agttcaaatt gaattctatc ttccacaatc acaatgggtg catcacccag tacacagaag 600
tttgaatcac aaaacataat taccacaata aaacacagtg ttcaagtatc ttggcagagc 660
aatctgccgc acaaactgca aattaaatta actacacaga ctaaaaacta tacagcctac 720
catcacagtt gtgcattata aaaaagggag tttctttcct ttggttttaa gtcaggaaca 780
gggtaggatt ttttaccctc nggccgggga ccacgctaaa ggggcgaaat ttcttgccan 840
natattccnt tcac 854

<210> 330
<211> 299
<212> DNA
<213> Homo sapien

<400> 330
ccaatgaata actgacttta taatcctggg caatcagctt ttggcgggtt gtaagtgctt 60
ctcgacactt ttcactcatg gattcttcaa atttatggtt aaagaggcac ttatacactc 120
tgccctcacc agcttgtgta ttttcacaaa aacgctcccg atcatctcgg caagcaaaat 180
ataaatgccg gtctaagtga aagtcatccg atgacagctc agccacccgg agaatggctt 240
tcttgcagag ttcagaaact tgaatcttgg gttctctttc ttctgcttct ttcaccagg 299

<210> 331
<211> 573
<212> DNA
<213> Homo sapien

<400> 331
aaagatatga acagcttaat tttccgtgtg attatctaat taaaaaagaa aaacaaaaca 60
agcaaaatgt tcaagttaaa aaaaaaacat accgggtgag caatgcacta aaattatcca 120
catgaaaaca aatggtctgt aatcttataa accaacatag catttcactg tcaacaatgt 180
gaaaatttaa tatcttctca aacaggcata agatgaagaa gtgctatttt ttaattgtaa 240
aaggaactta tgtaatgtaa aattacatta taatttttca ttccgaattg acaaatgatt 300
tcaaaaacaa ggatcaaagt ttgactgcaa atagtaatgc aatataattt cataaaaatc 360
cttcaatttc tatttttttc cttttctgta gttgacatat gaagaccact tcaatttcta 420
aaaaagggaa ccattccaat tttccctccc caagaaaatg tctcacaatt acaaagtaga 480
aaaacagccg ttcataaatg caaaaaaatt ctgatttata tatgaaataa tttctagatc 540
aattcaacat atttgatgac atttgttgag ttt 573

<210> 332
<211> 555
<212> DNA
<213> Homo sapien

<400> 332
aaatttgaaa gttgtaagca ctgatgttaa tgtgattgat cagcatgggc atatgtaaaa 60
tgtccttttc tggttgcctc tctatgctat tgtgttcaga tacttacacc ataattaaac 120
agtaagttat agacttgctg agtttggcat agatagtgcg ctcatttaat ctgtgcctct 180
caaaacttca gaatattagc atattaccac aaataatttt tggtgaaact attgagatat 240
taaaattttt gaaatcacta ctgttacctg ttatagaaaa tagtgttggc ttagtctagt 300
ctctgtgtaa ctggttacat tttgatggtt gtctatactc aactggatat gtgtatgtaa 360
attagaaaat acatacctat ccagacataa atgctaagta acattttttt cttcctccaa 420
ctacataatt tgtagctcat cattttttcct taatcctttc ctaacttgtc gcagcagttt 480
gaatttccca gatatttatg tttgaacata atggctcaga atacatattt gaacatcata 540
gttgtatata ttttt 555

<210> 333
<211> 460
<212> DNA
<213> Homo sapien

<400> 333
aaatttcttt caacagtcta ttggggtcca aaaagcatat atcaaaacaa aaataacaaa 60
agcaaaacaa aatgctacat gtaaaagcta aagaaagaaa atgcagcata ttcaggttct 120
ttttcttgag gtacctatat aaatttaatc acctgcccca aagtcctctc gttaggttaa 180
aaacacaatg cgtcctgggg agccaattgc ccggcacgtc ttattactga gaaagtgcaa 240
gaatgctgat catcttatgc agcatactaa aggatgattt actctttaca aaatagagct 300
taagtatcaa cctgatggaa gttagaaaat taaaaacatt taagtagaat catctctctc 360
tctatttttg agatcctgca gcaaaaagcc tcccaaatca actttcaaag ttctgccatt 420
aaggaatgtt ggttctcttg taaaattcag agatctcttt 460

<210> 334
<211> 190
<212> DNA
<213> Homo sapien

<400> 334
ccaaggaagg ctgtgctcta gcccatctga ccctgtctgc aaaccacctg gggacaagg 60
ctgatagaga cctgtgcaga tgtctctctc tgtgcccctc actcatctca ctggatctgt 120
ctgccaaccc tgagatcagc tgtgccagct tggaagagct cctgtccacc ctccaaaagc 180
ggccccaagg 190

<210> 335
<211> 394
<212> DNA
<213> Homo sapien

<400> 335
aaatttggac agacttctag cggacagtta cttctcaaga attttctata caaaagctgt 60
gccaggcata tattttctca ccaggacaca tggggcagcg gacccctggt gtcagtaaga 120
acacacccag aatgatataa ccagatattt ttcagtttct aaattaaggc atattcaaaa 180
aattccatgt acaagtttac accactttc taagttactc accaggtaat taaagcagat 240
tcacagatga attactctca gtttaactat atgcaacaac catgccaata acttttcttc 300
taaattttgc ataataatgg ttaaaaaaag tggtagttta actatcatgt tcacaattgt 360
catttttcaa ggcagtagaa gaccaagaca tttt 394

<210> 336
<211> 429
<212> DNA
<213> Homo sapien

<400> 336
aaaagctatc accattgtag tagaatcatc cttctttttt gaaatttgaa gcatcccagg 60
cttaaaatct tgtgtttcag aaagacagtt tataccatga ctgcttaatt atccccccaa 120
agaccttctg attgaagtca tgtacagttc agtggcctaa attctctgcc tttttaactt 180
gctttgcaag cctactctga aaataagtta tttagtcaag ttattctcaa agatgtccca 240
gttgcctaga aaggatcaaa tggaacattt gacacacata ctcaaaaaaa tgtaactgac 300
tataaacact ttaacctaat catctgtatc aaactttcta aaaatcaaat ctcaggattg 360
ttccacttta gagattctat gtaaagttta tataactata cttgtcaaat agcacctatc 420
tatgcattt 429

<210> 337
<211> 373

<212> DNA
<213> Homo sapien

<400> 337
aaagatgctg ttaatgaaca ttacggacaa ttcatggtgt ggctagttgg taacacttca 60
gctgattttt cttatgagat ggaaaaaaaa atcagccaag taagggcaca tcttcagttc 120
atttagaagt cagcatccaa ggtaaaagaa ttctctgttg gacttgacat cactcccatc 180
ctctgatact cgcctactct cttctcaaag aagttagtct ttccttccag tgaaatattc 240
tccataaagt caaatgggtt ctctactctg aaaaccttgc taaaacccag ttccagcata 300
agtctgtctg ccacaaactc aatgtattgc ttcatcagag tgcaattcat cccaatgagt 360
ttcacaggca agg 373

<210> 338
<211> 366
<212> DNA
<213> Homo sapien

<400> 338
ccatcccctt atgagcgggc gcagtgatta taggctttcg ctctaagatt aaaaatgccc 60
tagcccactt cttaccacaa ggcacaccta cacccttat ccccatacta gttattatcg 120
aaaccatcag cctactcatt caaccaatag ccctggccgt acgcctaacc gctaacatta 180
ctgcaggcca cctactcatg cacctaattg gaagcgccac cctagcaata tcaaccatta 240
accttccctc tacacttatc atcttcacaa ttctaattct actgactatc ctagaaatcg 300
ctgtcgcctt aatccaagcc tacgttttca cacttctagt aagcctctac ctgcacgaca 360
acacat 366

<210> 339
<211> 319
<212> DNA
<213> Homo sapien

<400> 339
ccttccctcc ccaccaccat caacctcttc aaaacctact ccctccctct aagtatctct 60
caacacagta tgtctggggc tagatttcaa aacccacgta atgaaaaagt cagttttaca 120
agcctaattt tgttgttttt ttttttatat caattaacgt taaaaattgc atcaactatt 180
taattcatga ggatctttca tattaaaatt taaccttaag attcaaccgc catgtgcttt 240
tataaaggaa acatttttta gagacgtctg agctcacttt tacatggtgg tgcctactgc 300
cgttaatgtt tgtgatttt 319

<210> 340
<211> 278
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(278)
<223> n = A,T,C or G

<400> 340
ctaataaaat gaattaacca ctcattcatn natctaccca cccnatccaa catctccnca 60
tgatgaaacn ncggctcact ccttggcgcc tgcctgatcc tccaantcac cacaggacta 120
ttcctagcca tgcactactn accagacncc tcaacngcct tttnatcaat nggncacatn 180
actcganacn taaatnatgg ctgaatcatc cgctacctnc acgccaatgg cagcctcaat 240
attctttatg ctgcctcttc ctacacatgc gggcgagg 278

<210> 341
<211> 400

<212> DNA
<213> Homo sapien

<400> 341
ccagcatggg gctgcagctg aacctcacct atgagaggaa ggacaacacg acggtgacaa 60
ggcttctcaa catcaacccc aacaagacct cggccagcgg gagctgcggc gcccacctgg 120
tgactctgga gctgcacagc gagggcacca ccgtcctgct cttccagttc gggatgaatg 180
caagttctag ccggtttttc ctacaaggaa ttcagttgaa tacaattctt cctgacgcca 240
gagaccctgc ctttaaagct gccaacggct ccctgcgagc gctgcaggcc acagtcggca 300
attcctacaa gtgcaacgcg gaggagcacg tccgtgtcac gaaggcgttt tcagtcaata 360
tattcaaagt gtgggtccag gctttcaagg tggaaggtgg 400

<210> 342
<211> 536
<212> DNA
<213> Homo sapien

<400> 342
aaagaacaat gggaaaaaca agtccgtgtt ctcacagatg ctgtcgatga cattacttcc 60
attgatgact tcttggctgt ctcagagaat cacattttgg aagatgtgaa caaatgtgtc 120
attgctctcc aagagaagga tgtggatggc ctggaccgca cagctggtgc aattcgaggc 180
cgggcagccc gggtcattca cgtagtcacc tcagagatgg acaactatga gccaggagtc 240
tacacagaga aggttctgga agccactaag ctgctctcca acacagtcat gccacgtttt 300
actgagcaag tagaagcagc cgtggaagcc ctcagctcgg accctgccca gcccatggat 360
gagaatgagt ttatcgatgc ttcccgcctg gtatatgatg gcatccggga catcaggaaa 420
gcagtgctga tgataaggac ccctgaggag ttggatgact ctgactttga gacagaagat 480
tttgatgtca gaagcaggac gagcgtccag acagaagacg atcagctgat agctgg 536

<210> 343
<211> 646
<212> DNA
<213> Homo sapien

<400> 343
aaaacttcta ttcatcaaaa gacataaaga aaacagtcaa gccacagact aggtgtaata 60
tctcaataca tatatccgac aagagaattg catctagaat gtataaagaa tttctatgac 120
ccaattatag ctatcaggga tatacaaatt aaaaccaaaa tgaaacatca ctacacaccg 180
attggaatgg ttaaaaagga aaatactgga caacaccaat atttgtaaag acaggaggta 240
ccagaactct cattcattat attcataaat tgacaaatat aaaaactgct atagtagggc 300
agtcttcctt agaaagggat tgtgggcatg acagagaaca atattaatct gtccattata 360
ttccttaact gtaaaatgga gaccatatgt tccaccagct tcacttggta attatgatac 420
atggctatta agagactcaa atgactccat ttcatcaact aatatgccct gtcaattcta 480
cttctaaagt atcccatgtt ctatccaatg tcataccact atcataattt aagtgttcat 540
aactctctat aatatttcaa taatctaact ggtctcaatg cctgtagtag aaattgcaga 600
ttgggctccc caatttctgt tccctaggaa ggctgagaaa gctttt 646

<210> 344
<211> 383
<212> DNA
<213> Homo sapien

<400> 344
cctgcacccc agtataaggg cctccccagc tgagtaagaa gctgcttccc ctcctctcat 60
aggccaagcc tattgtgtga aaccatctca tggtcttggt gacgtagacc atttttgaaa 120
ccgtctcatg gtcttggtga cgtagaccgt ttgcttcttt aactccagcc gcggaatgac 180
attagtggaa ccgggctagg gaactgctgg aagttcagga tgccaccacc ttgaacacct 240
aggccaggga tccccaccat gtcccgggtt tctttcttcg agagtataga accgttcatt 300
cttgctttgt gtcccattcc atctcttgaa aaaatgtagt ctttgaatgt gtgaaaatct 360

agggacattc aatctagtct ttt 383

<210> 345
<211> 263
<212> DNA
<213> Homo sapien

<400> 345
cctcccottc ccctttgctg gtgggaggag ctcgtgtgct ccttggccgc ttactggaag 60
ggcgtttttc agagctgcag ggacagggtg agcagctgaa gggctaggag ggaagccggc 120
ccccgctctg cagaagctgc atttcagctg aatctgtgtt tcagcctcag ttggttgcac 180
cgttagcccc tctcctcccg gatggtcatg tttttgtcac attagagaat aaacagccac 240
acacacattt tttttttcc ttt 263

<210> 346
<211> 132
<212> DNA
<213> Homo sapien

<400> 346
aaatccaaat acaaaagcat agtctctgca agattttgtt ctttgaattt cttgatattg 60
taattgatta ttgataactg tcatcatgaa attatctctc aataataaga taaataaact 120
agcatatgaa tc 132

<210> 347
<211> 564
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(564)
<223> n = A,T,C or G

<400> 347
cctgggtatc cagggaggct ctgcagccct gctgaagggc cctaactaga gttctagagt 60
ttctgattct gtttctcagt agtcctttta gaggcttgct atacttggtc tgcttcaagg 120
aggtcgacct tctaatgtat gaagaatggg atgcatttga tctcaagacc aaagacagat 180
gtcagtgggc tgctctggcc ctggtgtgca cggctgtggc agctgttgat gccagtgtcc 240
tctaactcat gctgtccttg tgattaaaca cctctatctc ccttgggaat aagcacatac 300
aggcttaagc tctaagatag ataggtgttt gtccttttac catcgagcta cttcccataa 360
taaccacttt gcatccaaca ctcttcaccc acctcccata cgcaagggga tgtggatact 420
tggcccaaag taactggtgg taggaatctt agaaacaaga ccacttatac tgtctgtctg 480
aggnagaaga taacagcagc atctcgacca gcctctgcct taaaggaaat ctttattaat 540
cacgtatggt tcacaagata attc 564

<210> 348
<211> 321
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(321)
<223> n = A,T,C or G

<400> 348
gcncatgaac anggagcaac ganaaagagat gtcgggctaa gggcccggga cgggcggcac 60

ccatcctgcn acggaacacn ttcgggttnt ggttttgatt ngttcacctc tgtttatatg 120
canctatttg ntcctcctcc cccaccccag nccccaactt catgcttntc ttccgcnctc 180
agccnccctg ccctgtcctc gcggtgagtc antgaccacn gnttcccctg cangagccgc 240
cgggcgtgag acncngaccc tcnntgcata caccaggccg ggcccnngct ggctcccccn 300
gnggccctgt gaaanagctg g 321

<210> 349
<211> 255
<212> DNA
<213> Homo sapien

<400> 349
ccatgacagt gaaggggctg ttaggaatat caacaccacc gaagcgcaca tagatcacat 60
atgtgcccgg cttggcagct gtgtagaaga tgtcataggt tccatcttca ttctcaatga 120
catcggcctc ggcctcagtg ccatctgggg tcagaaccgt gcaggtcact ttacccttcc 180
cggcagtctt ggcatcaacc acaaagccta cttcttcgcc agttttcaca gtggaggcga 240
ttccaggacc cgtag 255

<210> 350
<211> 496
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(496)
<223> n = A,T,C or G

<400> 350
gggcttattn gctcacaaaa tcattcnctt ttggaactat ggccaattga agctacacac 60
tgaatttatt aatacagcat taagtttctt tgtgtnaaaa aatctttgtn cncagtaata 120
aaaaaagata aggcaagatg cattaaacat gaaaccttct ggctcttttc ctctgcgttt 180
ttacagagcc actgatgact atctgcaaca aaagagttaa gtttctgatt ttccgtatca 240
agcatcttat gcctttgctg tggtaagaat tctggccaag caccctgaag gacagatgct 300
ggtgatggnc tttggcactt atgctggcaa actgagcttc tttcccttga gtacttttgn 360
aatgtacaag tagaagaagt cacaagtata ggatggtctg gactacgccg gccaccacag 420
caatgaggtc aaagaagccc tcaaagnaga agcgnccaga tccagttgac aagatacaaa 480
gcacgataga ggccca 496

<210> 351
<211> 109
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(109)
<223> n = A,T,C or G

<400> 351
ccatagtgaa gcctgggaat gagtgttact gcagcatctg ggctgccanc cacagggaag 60
ggccaagccc catgtagccc cagtcatcct gcccagcccc gcctcctgg 109

<210> 352
<211> 384
<212> DNA
<213> Homo sapien

<400> 352
ccttcgagag tgacctggct gcccaccagg accgtgtgga gcagattgcc gccatcgcac 60
aggagctcaa tgagctggac tattatgact cacccagtgt caacgcccgt tgccaaaaga 120
tctgtgacca gtgggacaat ctggggcccc taactcagaa gcgaagggaa gctctggagc 180
ggaccgagaa actgctggag accattgacc agctgtactt ggagtatgcc aagcgggctg 240
caccccttcaa caactggatg gagggggcca tggaggacct gcaggacacc ttcattgtgc 300
acaccattga ggagatccag ggactgacca cagcccatga gcagttcaag gccaccctcc 360
ctgatgccga caaggagcgc ctgg 384

<210> 353
<211> 345
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(345)
<223> n = A,T,C or G

<400> 353
ccttggtcag gatgaagtng gctgacacac cttagcttgg ntttgcttat tcaaaagana 60
aaataactac acatggaaat gaaactagct gaagcctttt cttgttttan caactgaaaa 120
ttgnacttgg ncacttttgt gcttgaggag gcccattttc tgcctggcag ggggcaggta 180
tgtgccctcc cgctgactcc tgctgtgtcc tgaggtgcat ttcctgttgn ncacacaang 240
gccangntcc attctccctc ccttttcacc agngccacan cctnntctgg aaaaangacc 300
agnggtcccg gaggaaccca tttgngctct gcttggacag canag 345

<210> 354
<211> 712
<212> DNA
<213> Homo sapien

<400> 354
ccatctacaa tagcatcaat ggtgccatca cccagttctc ttgcaacatc tcccacctca 60
gcagcctgat cgctcagcta gaagagaagc agcagcagcc caccagggag ctcctgcagg 120
acattgggga cacattgagc agggctgaaa gaatcaggat tcctgaacct tggatcacac 180
ctccagattt gcaagagaaa atccacattt ttgcccaaaa atgtctattt ttgacggaga 240
gtctaaagca gttcacagaa aaaatgcagt cagatatgga gaaaatccaa gaattaagag 300
aggctcagtt atactcagtg gacgtgactc tggacccaga cacggcctac cccagcctga 360
tcctctctga taatctgcgg caagtgcggt acagttacct ccaacaggac ctgcctgaca 420
accccgagag gttcaatctg tttccctgtg tcttgggctc tccatgcttc atcgccggga 480
gacattattg ggaggtagag gtgggagata aagccaagtg gaccataggt gtctgtgaag 540
actcagtgtg cagaaaaggt ggagtaacct cagcccccca gaatggattc tgggcagtgt 600
ctttgtggta tgggaaagaa tattgggctc ttacctccca atgactgccc taccccctgcg 660
gaccccgctc cagcgggtgg gggattttct tggactatga tgctggggga gg 712

<210> 355
<211> 385
<212> DNA
<213> Homo sapien

<400> 355
cctcatagcc gcttagcaca gttacagaat gtctgaaggg gacagtgtgg gagaatccgt 60
ccatgggaaa ccttcggtgg tgtacagatt tttcacaaga cttggacaga tttatcagtc 120
ctggctagac aagtccacac cctacacggc tgtgcgatgg gtcgtgacac tgggcctgag 180
ctttgtctac atgattcgag tttacctgct gcagggttgg tacattgtga cctatgcctt 240
ggggatctac catctaaatc ttttcatagc ttttcttttct cccaaagtgg atccttcctt 300
aatggaagac tcagatgacg gtccttcgct acccaccaaa cagaacgagg aattccgccc 360

cttcattcga aggctcccag agttt 385

<210> 356
<211> 347
<212> DNA
<213> Homo sapien

<400> 356
aaatgagata aagaaagtct ccttttgttt ttagatggaa aagaaagcac aagtttttc 60
tacctgtgaa tgaactttgg tgacctatat gtgccattca tgcagcattt ttgttcatat 120
tggcttagaa ttcagtgcat gaatatcatt acattcttat atctaacatt cctagttagc 180
tttgattcaa aatatacaaa atctgataca tgaatacttt gctagattaa tgacttgatc 240
atctttggaa tgagtaggca agacgatttt tacctattat ttctatgttg tgggtaatgt 300
taaaactaaa tacagatgat aataattgct atttcacagt gatgttt 347

<210> 357
<211> 313
<212> DNA
<213> Homo sapien

<400> 357
aaagtaatca acctctctgt ccttccatta gtctggatcg tctaaagatt gttttatttt 60
tagaggctca tccggtcaga tgttagtgat gtgaaatttc aggccaggcg tgacgtcagc 120
gtggcatttg aaacagctcc atgttgccct tagtgctgtc tgaccgaagc ctgtctgtcc 180
tcagatataa agatgaagcg cagctgtata aagaagagca cctgaggaat cggcagcacc 240
ctcactgcta cgttcagtac atgatcgcca tcatcaacaa ctgccagacc ttcaaggaat 300
ccatagtcag ttt 313

<210> 358
<211> 403
<212> DNA
<213> Homo sapien

<400> 358
aaaaagaagg acttagggtg tcgttttcac atatgacaat gttgcattta tgatgcagtt 60
tcaagtacca aaacgttgaa ttgatgatgc agttttcata tatcgagatg ttcgctcgtg 120
cagtactgtt ggttaaatga caatttatgt ggattttgca tgtaatacac agtgagacac 180
agtaatttta tctaaattac agtgcagttt agttaatcta ttaatactga ctcagtgtct 240
gcctttaaat ataaatgata tgttgaaaac ttaaggaagc aaatgctaca tatatgcaat 300
ataaaatagt aatgtgatgc tgatgctgtt aaccaaaggg cagaataaat aagcaaaatg 360
ccaaaagggg tcttaattga aatgaaaatt taattttgtt ttt 403

<210> 359
<211> 411
<212> DNA
<213> Homo sapien

<400> 359
aaataaatac ttagaacacg acttggctcc tacaagcatc tggactctag gtctcagtac 60
tggagtgtct cacccatggg ccccacgcag ggacgccacg gttccctccc accccgtgat 120
caagacacgg aatcggctgc cgatggttgg atcgcaatgc gccccttttc tagagccttc 180
cccggccatc tacaggcagg atgcggctgg gaaaaagaca actggaattt ctcgaaggtt 240
gatggtccgc acggttgagg attctacgtg gttctcttgg ttcccctggt gtgtgtgtgt 300
gtggaggagg ccgcggccct tagatcacct tcttgagctc gtcgtacagg accagcacga 360
aggcgccccc catgccccgc aggacgttgg accacgcacc cttgaagaag g 411

<210> 360
<211> 378

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(378)
<223> n = A,T,C or G

<400> 360
cctcttcagg ggcccgagcc agggacaggg ccttggtttc cttctccctg gcttctgcct 60
cagctctgtc cctctcatcc gcgtatttgg aagagatgtt tttctcctcg gctaacaact 120
gatcaaattt cctctgcttc ttttccaggt tggacacgag ttgccgctgg ttgtccaaat 180
caacaaccag gtcgtccagc tcctgctgaa gcctgttctt ggtcttttcc agtttatcat 240
aagcggccgc cttctcctcg tactgctggg tgaggntctc gatctccttc tggaacctct 300
tcttcccctc ttccagagct tccacggngc tggcaaagtc ctgcagcttc ttcttcgagt 360
cggagagctg gatgttga 378

<210> 361
<211> 372
<212> DNA
<213> Homo sapien

<400> 361
aaatactggg ggccattaag agtggatgta gctaagagct tagctaacat tgccttttca 60
ctctattttt ctcagatatt gtaagcattc tgtttttcaa tattgtagtt aattttttgg 120
ctttcaacag cagccctagt aatggtggag ttgttaatta atgtgtatat tgtactgaat 180
ttctgtcagt taaggggttc actgctttgg tggaaattgg tggaaattgc tagcaggttc 240
cacgatgttt atttttttct ccatgttgta tatcattacc atttcacata cgcgtttcta 300
tttttcttcc tctcctcctg atctccttaa aaatgaatct agagttggtg gcttttttccc 360
cctcctcttt gg 372

<210> 362
<211> 544
<212> DNA
<213> Homo sapien

<400> 362
cctgagtcac ctagcatagg gttgcagcaa gccctggatt cagagtgtta aacagaggct 60
tgccctcttc aggacaacag ttccaattcc aaggagccta cctgaggtcc ctactctcac 120
tggggtcccc aggatgaaaa cgacaatgtg ccttttttatt attatttatt tggtggtcct 180
gtgttattta agagatcaaa tgtataacca cctagctctt ttcacctgac ttagtaataa 240
ctcatactaa ctggtttgga tgcctgggtt gtgacttcta ctgaccgcta gataaacgtg 300
tgcctgtccc ccaggtggtg ggaataattt acaatctgtc caaccagaaa agaatgtgtg 360
tgtttgagca gcattgacac atatctactt tgataagaga cttcctgatt ctctaggtcg 420
gttcgtggtt atcccattgt ggaaattcat cttgaatccc attgtcctat agtcctagca 480
ataagagaaa tttcctcaag tttccatgtg cggttctcct agctgcagca atactttgac 540
attt 544

<210> 363
<211> 328
<212> DNA
<213> Homo sapien

<400> 363
aaactggtta tgacaaaagc ctttagttgt gtttcttgaa ctataaagaa aacaaatttt 60
ggcagtcttt aagtatatat agcttaaaat ataattttta gcatttggca ccatatgtat 120
gccattatat ttgattttgc attactgttt cacaatgaag ctttctttaa ggctttgatt 180
tttatgatta tgaaagaaat aaggcacaac cacagttttt ctttcttaaa tttcatcact 240

gttgatgtgg ttcttttgtg ttaaaaaaaa aaagtgcaac tatcaaaact aaaaaattat 300
agagtaatat tgccgttctg ctgatttt 328

<210> 364
<211> 569
<212> DNA
<213> Homo sapien

<400> 364
cctgggcacc tctttgcttg aaatatggca agacttggaa aaatgtttgc ccttagaatc 60
tatctcacta ctttagttag ttgtctcctt tgggcctggg cacagttctg gccctgatct 120
ggaacagact ccctttcta aaactgaact tgaccacatc aaaagtttgt aaaacaatct 180
ccatggtaat taaacttgca ttcaacacca tatggtaaca gaagatggca aaggataaga 240
ttcagatctt agatctttcc aagtagggca tgttagatga tagaaggatt agttgcaagc 300
tggatctgag ctcaggcttg ggcatgaagg aaactgtctc ccatgtggtt tggaagagtt 360
aggggctccc tgagctctat tgtgaactat acgggtttca tccaaggaat ggtatgatgt 420
gggcataaaa ccattcttca gacaactgaa gatggtcccc ttctgtagcc agaaacacta 480
gctgtcctgc attgtccatt tcctttagcc ccaggcggtc ctgtgtgtac agggaggtct 540
cctgtaaggg aatggtttcc ttggcttgg 569

<210> 365
<211> 151
<212> DNA
<213> Homo sapien

<400> 365
aaaaaaaaaa atccttttat tatggaattt gtcaaacaca cacacaagca taacaaaccc 60
ctaggtaccc atctccaagt tttgacccct attataattt catcttcagt gttttattat 120
ccacttcctc tctctctatc tttagtattt t 151

<210> 366
<211> 508
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(508)
<223> n = A,T,C or G

<400> 366
agtataaaga tatattccat aaaagagttt ggcagtcaaa ganaagcatc gcacttccga 60
aaaacacaag cattcttctc ctagtctaca gagaattgng taaaaaaaaa aaaaaatcat 120
catcaacagc cnccantnta cnccacacta gaatgtacac tccggcaagt aaattaaggn 180
tgcagtccat ccctgaacga tganaagngg tctgagctat ggcaaagngt tanaaagtag 240
cccagctana caaatgcccc agctatcccc aggggagtta ttcagtactt aanacttcat 300
ttccaananc agccccggaa aagccctgac aggaaggggg gaccagngat caccgatntc 360
ccattagggg cggncaccaa aaacaaaatg cctggagctt ntgagcagct gcagcctggg 420
gttgtggcta ggcncngggn gnggttgcaa aaaaacggct gtntccgggg agaggcaaat 480
ggcaggccag ccagccctgg gtacatgg 508

<210> 367
<211> 382
<212> DNA
<213> Homo sapien

<400> 367
cctgagcggc tagtctttaa gatgcgcttc tatcgtttgc tgcaaatccg agcagaagcc 60

ctcctggcgg caggcagcca tgtgatcatt ctgggtgacc tgaatacagc ccaccgcccc 120
attgaccact gggatgcagt caacctggaa tgctttgaag aggacccagg gcgcaagtgg 180
atggacagct tgctcagtaa cttggggtgc cagtctgcct ctcatgtagg gcccttcatc 240
gatagctacc gctgcttcca accaaagcag gagggggcct tcacctgctg gtcagcagtc 300
actggcgccc gccatctcaa ctatggctcc cggcttgact atgtgctggg ggacaggacc 360
ctggtcatag acacctttca gg 382

<210> 368
<211> 174
<212> DNA
<213> Homo sapien

<400> 368
ccttctccct ctttgacaag gatggagatg gcactatcac caccaaggag ttggggacag 60
tgatgagatc cctgggacag aaccccactg aagcagagct gcaggatatg atcaatgagg 120
tggatgcaga tgggaacggg accattgact tcccggagtt cctgaccatg atgg 174

<210> 369
<211> 216
<212> DNA
<213> Homo sapien

<400> 369
aaatctcatg ggttctatta aaaaaatata tatatagggc cccaatccat tgccatcaaa 60
ttgcccttgg acttttccaa ggtatattat ggggttttat gcaaaattcc aagctaccat 120
gtaacttttt ttaaccattt aacaaggagg gggaactgtt tcctaccttc tttacatgtt 180
gtgcattgtt gtggtccaga aatgccaaac cttttt 216

<210> 370
<211> 344
<212> DNA
<213> Homo sapien

<400> 370
ccttggtcag gatgaagttg gctgacacag cttagcttgg ttttgcttat tcaaaagaga 60
aaataactac acatggaaat gaaactagct gaagcctttt cttgttttag caactgaaaa 120
ttgtacttgg tcacttttgt gcttgaggag gcccattttc tgcctggcag ggggcaggtc 180
tgtgccctcc cgctgactcc tgctgtgtcc tgaggtgcat ttcctgttgt acacacaagg 240
gccaggctcc attctccctc cctttccacc agtgccacag cctcgtctgg aaaaaggacc 300
aggggtcccg gaggaaccca tttgtgctct gcttggacag cagg 344

<210> 371
<211> 741
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(741)
<223> n = A,T,C or G

<400> 371
aaattacata tctaattgtg tgatttgtta aatgcccatt tcttcatcta agtgctaagt 60
gctaagtgta gcagtttgtt ccctgctaca ctccaaggca caaaggagtt caaggaatgt 120
gcaatggaaa tcagttagat gaatgtgtta ggaaccttcc ctttaataaa gctggatccc 180
acactagccc ctacaccctc tcatcaccaa atattcctgc ttcctctcac ctgcacttgc 240
tgttctctcc tctgccacac aaatctacct ctcaagccta ggtcccacct gcttcatgac 300
aactttccag actattccag aacctttaac catctctgac ctctcatcag atctatgttg 360

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tacataacac caattaatga gatcattact gctttatgct ctaattgctt cctgtattca     420
aaatcttctc tccaaccaca taatgactcc ctaaacttct cttgtatttt ccaatgcctt     480
gtacaagcac agaactggtc aatcaataaa tactcactgg ttatttgagg aaaaaatgtt     540
gccaagcacc atctttatca gaaaataaat caattcttct aaacttggag aaatcaccct     600
attcctagta tgtgatctta attagaacaa ttcagattga gaangngaca gcatgctggc     660
agtcctcaga gccctcgctt gctctcggna cctccctgcc tgggctccca ctttggtggc     720
atttgaggag cccttcagcc t                                                741
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<210> 372
<211> 218
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(218)
<223> n = A,T,C or G

<400> 372
ccgccagtgt gctggaattc gcccttggcc gcccgggcag gtaccacaac agcaggnctg      60
agtgagaaat ctaccacctt ctacagtagc cccagatcac cggacacaac actctcacct     120
gccagcacga caagctcagg cgtcagtgaa gaatccacca cctcccacag ccgaccaggc     180
tcaacgcaca caacagcatt ccctggcagt accttggn                             218

<210> 373
<211> 168
<212> DNA
<213> Homo sapien

<400> 373
actgctaggg aatgctgttg tgtgcattga gcctggtcgg ctgtgggagg tggtggattc      60
ttcactgacg cctgagcttg tcgtgctggc aggtgagagt gttgtgtccg gtgatctggg     120
gctactgtag aaggtggtag atttctcact caggcctgct gttgtggt                  168

<210> 374
<211> 154
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(154)
<223> n = A,T,C or G

<400> 374
tgagaaatct accaccttct acagngagcc ccanatcacc ggacacaaca ctctcacctg      60
ccagcacgac aagctcaggc gtcagtgaag aatccaccac ctcccacagc cgaccaggct     120
caacgcacac aacagcattc cctggcagta cctc                                 154

<210> 375
<211> 275
<212> DNA
<213> Homo sapien

<400> 375
actgccaggg gacagtgctg tgtcagttga acctgggctg ctgtgggaag ttgttgattc      60
ctgactgggg cctgaggtgg tggtgctggc aggtaacagt gttgtatccg ttgagcctgg     120
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gctgctgtgg gaagttgtag aatgccgact gaggcctggc gtggtggtgc tgtcagggaa 180
tgctgttgtg tgcgttgagc ctggtcggct gtgggaggtg gtggattctt cactgacgcc 240
tgagcttgtc gtgctggcag gtgagagtgt tgtgg 275

<210> 376
<211> 191
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(191)
<223> n = A,T,C or G

<400> 376
actgccaggg gacagtgctg tgtcagttga acctgagctg ctgtgggaag ttgttgattc 60
ctgactggag cctgaggtgg tggtgctggc aggtaacagt gttgtatccg ttgagcctgg 120
gctgctgtgg gaagttgtag aatgccgact gaggcctgcc gtggtggtgc tgntagggaa 180
tgctgctagc g 191

<210> 377
<211> 476
<212> DNA
<213> Homo sapien

<400> 377
ccgccagtgt gctggaattc gcccttggcc gcccgggcag gtacatttcc ttgtagactc 60
tgttaatttc ctgcagctcc tggttggttc tggagcagat gatctcaatg agagagtcct 120
cgtcggttcc cagccccttc atggaagctt ttagctcaga agcgtcatac tgagcaggtg 180
tcttcaatag gcccaaaatc accgtctcca ggtggccaga taaggctgac ttcagtgctg 240
atgcaagttc ctttttggtc cttctctggt aggcgaaggc aatatcctgt ctctgtgcat 300
tgctgcggtt ggtcaaaatg ttgacaatgg tgacctcatc cacacctttg gtcttgatgg 360
ctgtttcaat gttcaaagca tcccgctcag catcaaagtt agtataggct ttgacagacc 420
catatgcact tgggggtgta gagtgatcac cctccaagcc gagcttgcac aggatt 476

<210> 378
<211> 455
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(455)
<223> n = A,T,C or G

<400> 378
agtgtgctgg aattcgccct tggccgcccg ggcaggtaca catcccatct tcaaatttaa 60
aatcatattg tcagttgtcc aaagcagctt gaatttaaag tttgtgctat aaaattgtgc 120
aaatatgtta aggattgaga cccaccaatg cactactgta atatttcgct tcctaaattt 180
cttccaccta cagataatag acaacaagtc tgagaaacta aggctaacca aacttagata 240
taaatcctac caataaaatt tttcagtttt aagttttaca gtttgattta aaaacaaaac 300
agaaacaaat ttcaaaataa atcacatctt ctcttaaaac ttggcaaacc cttccctaac 360
tgtccaagtn tgagcataca ctgccactgg ctttagatac tccaattaaa tgcactactc 420
tttcactggt ctgaatgaag tatggtgaaa caagc 455

<210> 379
<211> 297
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(297)
<223> n = A,T,C or G

<400> 379
agctcggatc cctagnacgg ccgccagtgt gctggaattc gcccttagcg gcggcccggg 60
caggtacaaa gaatccttag acgccatact gagttttaag ttccttaatt cctaatttaa 120
ggcttctagt gaagcctcct cacagtaggc ttcactaggc ccacagtgcc cctagacctc 180
tgacaatccc accctagaca gactttattg caaaatgcgc ctgaagaggc agatgattcc 240
caagagaact caccaaatca agacaaatgt cctagatctc tagtgtggna gaactat 297

<210> 380
<211> 144
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(144)
<223> n = A,T,C or G

<400> 380
actttgctga aaattctttt tcccagggtc tataaaacat taatttgttt ttatatttta 60
ctattttttt gngttttttt gtttttaaat caataagtaa tctaggacta gcattatgtt 120
tgctagacct ggcatttgct cggc 144

<210> 381
<211> 424
<212> DNA
<213> Homo sapien

<400> 381
actcttgaat acaagtttct gataccactg cactgtctga gaatttccaa aactttaatg 60
aactaactga cagcttcatg aaactgtcca ccaagatcaa gcagagaaaa taattaattt 120
catgggacta aatgaactaa tgaggataat attttcataa ttttttattt gaaattttgc 180
tgattcttta aatgtcttgt ttcccagatt tcaggaaact ttttttcttt taagctatcc 240
acagcttaca gcaatttgat aaaatatact tttgtgaaca aaaattgaga catttacatt 300
ttctccctat gtggtcgctc cagacttggg aaactattca tgaatattta tattgtatgg 360
taatatagtt attgcacaag ttcaataaaa atctgctctt tgtataacag aatacatttg 420
aaaa 424

<210> 382
<211> 408
<212> DNA
<213> Homo sapien

<400> 382
actcttgaat acaagtttct gataccactg cactgtctga gaatttccaa aactttaatg 60
aactaactga cagcttcatg aaactgtcca ccaagatcaa gcagagaaaa taattaattt 120
catgggacta aatgaactaa tgaggataat attttcataa ttttttattt gaaattttgc 180
tgattcttta aatgtcttgt ttcccagatt tcaggaaact ttttttcttt taagctatcc 240
acagcttaca gcaatttgat aaaatatact tttgtgaaca aaaattgaga catttacatt 300
ttctccctat gtggtcgctc cagacttggg aaactattca tgaatattta tattgtatgg 360
taatatagtt attgcacaag ttcaataaaa atctgctctt tgtatgac 408

<210> 383
<211> 455
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(455)
<223> n = A,T,C or G

<400> 383
actcttgaat acaagtttct gataccactg cactgtctga gaatttccaa aactttaatg 60
aactaactgn cnncttcatg aaactgtcca ccaagatcaa gcagagaaaa taattaattt 120
catgggacta aatgaactaa tgaggataat attttcataa ttttttattt gaaattttgc 180
tganncttta aatgtcttgt ttcccagatt tcaggaaact ttttttcttt taagctatcc 240
acagcttata gcaatttgat aaaatatact tttgtgaaca aaaattgaga catttacatt 300
ttctccctat gtggtcgctc cagacttggn aaactattca tgaatattta tattgtatgg 360
taatatagtt attgcacaag ttcaataaaa atctgctctt tgtataacag aatacatttg 420
aaaacattgg ttatattacc aagactttga ctaga 455

<210> 384
<211> 376
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(376)
<223> n = A,T,C or G

<400> 384
actcttgaat acaaggttct gatatcactg cactgtctga gaatttccaa aactttaatg 60
aactaactga cagcttcatg aaactgtcca ccaagatcaa gcagagaaaa taattaattt 120
catgggacta aatgaactaa tgaggataat attttcataa ttttttattt gaaattttgc 180
tgattcttta aatgtcttgt ttcccagatt tcaggaaact tttttttctt ttaagctatc 240
cacagcttac agcaatttga taaaatatac ttttgngaac aaaaattgag acatttacat 300
tttctcccta tgtgggcgct ccagacttgg gaaactattc atgaatattt atattgnatg 360
ggaatatagc attgcc 376

<210> 385
<211> 422
<212> DNA
<213> Homo sapien

<400> 385
acctgtgggt ttattaccta tgggtttata tcctcaaata cgacattcta gtcaaagtct 60
tggtaatata accaatgttt tcaaatgtat tctgtcatac aaagagcaga tttttattga 120
acttgtgcaa taactatatt accatacaat ataaatattc atgaatagtt tcccaagtct 180
ggagcgacca catagggaga aaatgtaaat gtctcaattt ttgttcacaa aagtatattt 240
tatcaaattg ctgtaagctg tggatagctt aaaagaaaaa aagtttcctg aaatctggga 300
aacaagacat ttaaagaatc agcaaaattt caaataaaaa attatgaaaa tattatcctc 360
attagttcat ttagtcccat gaaattaatt attttctctg cttgatcttg gtggacagtt 420
tc 422

<210> 386
<211> 313
<212> DNA
<213> Homo sapien

<400> 386
caagtaggtc tacaagacgc tacttcccct atcatagaag agcttatcac ctttcatgat 60
cacgccctca taatcatttt ccttatctgc ttcctagtcc tgtatgccct tttcctaaca 120
ctcacaacaa aactaactaa tactaacatc tcagacgctc aggaaataga aaccgtctga 180
actatcctgc ccgccatcat cctagtcctc atcgccctcc catccctacg catcctttac 240
ataacagacg aggtcaacga tccctccctt accatcaaat caattggcca ccaatggtac 300
tgaacctacg agt 313

<210> 387
<211> 236
<212> DNA
<213> Homo sapien

<400> 387
cgccctcata atcattttcc ttatctgctt cctagtcctg tatgcccttt tcctaacact 60
cacaacaaaa ctaactaata ctaacatctc agacgctcag gaaatagaaa ccgtctgaac 120
tatcctgccc gccatcatcc tagtcctcat cgccctccca tccctacgca tcctttacat 180
aacagacgag gtcaacgatc cctcccttac catcaaatca attggccacc aatggt 236

<210> 388
<211> 195
<212> DNA
<213> Homo sapien

<400> 388
acgccctttt cctaacactc acaacaaaac taactaatac taacatctca gacgctcagg 60
aaatagaaac cgtctgaact atcctgcccg ccatcatcct agtcctcatc gccctcccat 120
ccctacgcat cctttacata acagacgagg tcaacgatcc ctcccttacc atcaaatcaa 180
ttggccacca atggt 195

<210> 389
<211> 183
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(183)
<223> n = A,T,C or G

<400> 389
taacactcac aacaaaacta actaatacta nnatctcaga cgctcaggaa atagaaaccn 60
cctgaactat cctgcccgcc atcatcctag tcctcatcgc cctcccatcc ctacncatcc 120
tttacataac agacgaggtc aacgatccct cccttaccat caaatcaatt ggccaccaat 180
ggt 183

<210> 390
<211> 473
<212> DNA
<213> Homo sapien

<400> 390
acaaagcagc aactgcaata ctcaaggtta aaacattaga aaagcatttg tgtgacaggt 60
atattacagt attatcaaaa tattacattt tcagacttac ttagcagata atcatccacc 120
agagcttaaa tctttaaatt atttccatag tcttaaaaaa tatgtaatgt cagaatgcat 180
ataaaaagaa tgtaaaagga aacctaaaat acaaatggaa taatgtaaca aataaatatt 240
tgatttcagt aactgttaat aatcagctca acaccaccat tctctctaaa ctcaatttaa 300

ttcttatagg aataatgaac tgtcaaatgc catggcataa ttatttattt ccaagctatc 360
atcaatgatt agaactaaaa aaaatttggc ataaaaaaat cacaattcag cataaataaa 420
gctattttta gcttcaacac tagctagcat ctctaagaat tgttgaaata agt 473

<210> 391
<211> 216
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(216)
<223> n = A,T,C or G

<400> 391
atttgtattt taggtttcct tttacattct ttttatatgc nntctgacat tacatatttt 60
ttaagactat ggaaataatt taaagattta agctctggtg gatgattatc tgctaagtaa 120
gtctgaaaat gtaatatttt gataatactg taatatacct gtcacacaaa tgcttttcta 180
atgttttaac cttgagtatt gcagttgctg ctttgt 216

<210> 392
<211> 98
<212> DNA
<213> Homo sapien

<400> 392
acttatttca acaattctta gagatgctag ctagtgttga agctaaaaat agctttattt 60
atgctgaatt gtgatttttt tatgccaaat ttttttaa 98

<210> 393
<211> 397
<212> DNA
<213> Homo sapien

<400> 393
tgccgatata ctctagatga agttttacat tgttgagcta ttgctgttct cttgggaact 60
gaactcactt tcctcctgag gctttggatt tgacattgca tttgaccttt tatgtagtaa 120
ttgacatgtg ccagggcaat gatgaatgag aatctacccc cagatccaag catcctgagc 180
aactcttgat tatccatatt gagtcaaatg gtaggcattt cctatcacct gtttccattc 240
aacaagagca ctacattcat ttagctaaac ggattccaaa gagtagaatt gcattgaccg 300
cgactaattt caaaatgctt tttattatta ttattttta gacagtctca ctttgtcgcc 360
caggccggag tgcagtggtg cgatctcaga tcagtgt 397

<210> 394
<211> 373
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(373)
<223> n = A,T,C or G

<400> 394
ttacattgtt gagctattgc tgttctcttg ggaactgaac tcactttcct cctgaggctt 60
tggatttgac attgcatttg accttttatg tagtaattga catgtgccag ggcaatgatg 120
aatgagaatc taccccccaga tccaagcatc ctgagcaact cttgattatc catattgagt 180
caaatggtag gcatttccta tcacctgttt ccattcaaca agagcactac attcatttag 240

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ctaaacggat tccaaagagt agaattgcat tgaccacgac tantttcaaa atgcttttta     300
ttattattat tttttagaca gtctcacttt gtcgcccagg ccggagtgca gtggtgcgat     360
ctcagatcag tgt                                                        373

      &lt;210&gt; 395
      &lt;211&gt; 411
      &lt;212&gt; DNA
      &lt;213&gt; Homo sapien

      &lt;220&gt;
      &lt;221&gt; misc_feature
      &lt;222&gt; (1)...(411)
      &lt;223&gt; n = A,T,C or G

      &lt;400&gt; 395
actgatcatt ctatttcccc ctctattgat ccccacctcc aaatatctca tcaacaaccg      60
actaatcacc acccaacaat gactaatcaa actaacctca aaacaaatga taaccataca     120
caacactaaa ggacgaacct gatctcttat actagtatcc ttaatcattt ttattgccac     180
aactaacctc ctcggactcc tgcctcactc atttacacca accacccaat tatctataaa     240
cctagccatg gccatcccct tatgagcggg cgcagtgatt ataggctttc gctctaagat     300
taaaaatgcc ctagcccact tcttacngca aggcacacct acacccctta tccccatact     360
agttattatc gaaaccatca gcctactcat tcaaccaata gccctggccg t              411

      &lt;210&gt; 396
      &lt;211&gt; 411
      &lt;212&gt; DNA
      &lt;213&gt; Homo sapien

      &lt;400&gt; 396
actgatcatt ctatttcccc ctctattgat ccccacctcc aaatatctca tcaacaaccg      60
actaattacc acccaacaat gactaatcaa actaacctca aaacaaatga tagccataca     120
caacactaaa ggacgaacct gatctcttat actagtatcc ttaatcattt ttattgccac     180
aactaacctc ctcggactcc tgcctcactc atttacacca accacccaac tatctataaa     240
cctagccatg gccatcccct tatgagcggg cgcagtgatt ataggctttc gctctaagat     300
taaaaatgcc ctagcccact tcttaccaca aggcacacct acacccctta tccccatact     360
agttattatc gaaaccatca gcctactcat tcaaccaata gccctggccg t              411

      &lt;210&gt; 397
      &lt;211&gt; 351
      &lt;212&gt; DNA
      &lt;213&gt; Homo sapien

      &lt;220&gt;
      &lt;221&gt; misc_feature
      &lt;222&gt; (1)...(351)
      &lt;223&gt; n = A,T,C or G

      &lt;400&gt; 397
ngccgangta caaaaaaaag cacattccta gaaaaaggta ttggcaaata gtaaaaatgg      60
gaggtcaaaa ncaaaaaaaa aaaaaacaaa acnaaaaaaa gaaaaaacca acaattcttc     120
aattcagtgt gcaaacatta tataaaaata gaaatactaa ctctacaggc agtatttcct     180
gataaattat ttaaatagca tatctacnca atctgagata tctattccaa tggcaatgag     240
aaaataattt ataaaaataa agcaatggta taccanatga tagaaaaaaa cataactttc     300
agaaattgta tttaacattt caatgctatt tccttattgn gaatncttct c              351

      &lt;210&gt; 398
      &lt;211&gt; 363
      &lt;212&gt; DNA
```

<213> Homo sapien

<400> 398
acaaaaaaaa gcacattcct agaaaaaggt attggcaaat agtaaaaatg ggaggtcaaa 60
agcaaaaaaa aaaaaaacaa aacaaaaaaa agaaaaaacc aacaattctt caattcagtg 120
tgcaaacatt atataaaaat agaaatacta actctacagg cagtatttcc tgataaatta 180
tttaaatagc atatctacac aatctgagat atctattcca atggcaatga gaaaataatt 240
tataaaaata aagcaatggt ataccagatg atagaaaaaa acataacttt cagaaattgt 300
atttaacatt tcaatgctat ttccttattg ggaatacttc tctgcagagt ttttatgcta 360
tgt 363

<210> 399
<211> 360
<212> DNA
<213> Homo sapien

<400> 399
actgtttcct cgtggttcag ggtgtgcat gaaggctctt aggagagcaa acacctgttc 60
ctattctgta tgtccctccc tcatttcaaa tgagagtaac caattgagta aaataaccaa 120
ataaccattg ccccaccatg aacatggggc ttgggaagac agtcctacaa tcttcatcat 180
atatttaggt ttttaggcca gccagctctt tttttccaaa gctttctttt gaatacccgc 240
ccgggcggcc cctaagggcg aattctgcag atatccatca cactggcggc cgctcgagca 300
tgcatctaga gggcccaatt cgccctatag tgagtcgtat tacaattcac tggccgtcgt 360

<210> 400
<211> 87
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(87)
<223> n = A,T,C or G

<400> 400
ctgcacatat cnattacact ggcggccgct cgagcatgca tgnagagggc ccaattctcc 60
ctatattgag tggaattaca atncnct 87

<210> 401
<211> 328
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

<400> 401
acccagggac acaaacactc tgcctaggaa aaccagagac ctttgttcac ttgtttatct 60
gctgaccttc cttccactat tgtcctatga ccctgccaaa tccccctctg cgagaaacac 120
ccaagaatga tcaataaaaa ataaaataaa attaaattaa aaaaaaaaaa agagaggaac 180
ccacaaaaaa aaaaaaaaag aaagtntata aaataaaata ttgaagtcct ttcccattaa 240
aaaaaaaaaa aagaaaaagc acggactctt tcatccagtt ctgatgtgat tatctctgga 300
aggcatttc tcctcctctt ccctcccc 328

<210> 402
<211> 268

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(268)
<223> n = A,T,C or G

<400> 402
nacataatga caacatcttc actagactga gtgttcaagg atttgagatg attcgctatt 60
catcacaccc cgaagattga gatccactgt atttacacaa agcaaagcca tgtcagcaag 120
ggactgtcaa cctgattctg agaacataaa cattcaaaat ttattttcca gtgttccttt 180
ttggaaacca acaacacatc tttaatacct acacacacac acatctntac ctttaaaaaa 240
aaaaaaaaag tgnaacttca cagatagt 268

<210> 403
<211> 538
<212> DNA
<213> Homo sapien

<400> 403
acagtgatag ctccccctgg gcaatacaat acaagaacag tgggttttgt caaattggaa 60
caaggaaaca gaaccacaga aataaataca ttggttaaca tcagattagt tcaggttact 120
tttttgtaaa agttaaagta gaggggactt ctgtattatg ctaactcaag tagactggaa 180
tctcctgtgt tctttttttt tttaaattgg ttttaatttt ttttaattgg atctatcttc 240
ttccttaaca tttcagttgg agtatgtagc atttagcacc actggctcaa tgcgctcacc 300
taggtgagag tgtgaccaaa tcttaaagca ttagtgctat tatcagttac caccatttgg 360
ggcttttatc cttcatgggt tatgatgttc tcctgatgac acatttctct gagttttgta 420
attccagcca aagagagacc attcactatt tgatggctgg ctgcatgcag acatttaaag 480
cttttagaga atacactaca ccagggagta tgactactag tatgactatt aggagggt 538

<210> 404
<211> 310
<212> DNA
<213> Homo sapien

<400> 404
tttttttata gatacaattg gcttttattt gtgattcatg agtcagggca gtttccattc 60
tgcaaaatat agtgatagct cctactgggc aatacaacag tagaacagtg ggttttgtaa 120
aatgggaatc caggaacaga agaatataaa taaattgatt taaataaact gattggttaa 180
tttcagaata cttcatatta ctttttttcta agagttaaag cagaaaggac tttcttactg 240
tgctgactca gacagcctgg actctcatgt ttttaggaaa attttgtctg ttctgggatc 300
tacctgcttc 310

<210> 405
<211> 559
<212> DNA
<213> Homo sapien

<400> 405
acaaatcaca attattaact cactggtagg gcagtgatga tcaaaccaat tgcattcatc 60
catgctgtaa tgttctctct tggcactaaa ggctgactgc agccggcaaa aaagaatgta 120
agtatgaatt tataaaaaca ttttagatgg ctgacaacgg atcttatttt taaagaatat 180
gtctaattca gaggatcgac aactaatcca tttcaataaa acaatgggga attttttatt 240
gaataaaaat gtaatatgca taaaaactca agaaggcttt ttaaaaatac ttcctcccca 300
atcattatcc catacttcat gctaattttt aaaagaatct tgaaatcttg aaaacaagat 360
gaagagaatc ttgttttaag tgacaagtta acattattcc tatattaaat gtcaaactgc 420
tattaatgag tagaagtagg aacaaacccg gatcttagga tcctgtccag ggctcattcc 480

ataactccta tatcacaaag acaagatctg gaaccagaaa acagtcatca tccaatgtgc 540
atcagccttg cggcaacag 559

<210> 406
<211> 427
<212> DNA
<213> Homo sapien

<400> 406
acaacagaat atctcgggaa tggactcaga agtatgccat gtgatgctac cttaaagtca 60
gaataacctg cattatagct ggaataaact ttaaattact gttccttttt tgattttctt 120
atccggctgc tcccctatca gacctcatct tttttaattt tattttttgt ttacctccct 180
ccattcattc acatgctcat ctgagaagac ttaagttctt ccagctttgg acaataactg 240
cttttagaaa ctgtaaagta gttacaagag aacagttgcc caagactcag aatttttaaa 300
aaaaaaaatg gagcatgtgt attatgtggc caatgtcttc actctaactt ggttatgaga 360
ctaaaaccat tcctcactgc tctaacatgc tgaagaaatc atctgagggg gagggagatg 420
gatgctc 427

<210> 407
<211> 419
<212> DNA
<213> Homo sapien

<400> 407
acaatttgta gttgtttcca ggtttggcta ataatcattc cttaacctag aattcagatg 60
atcctggaat taaggcaggt cagaggactg taatgataga attaaattag tgtcactaaa 120
aactgtccca aagtgctgct tcctaatagg aattcattaa cctaaaacaa gatgttacta 180
ttatatcgat agactatgaa tgctatttct agaaaaagtc tagtgccaaa tttgtcttat 240
taaataaaaa caatgtagga gcagcttttc ttctagtttg atgtcattta agaattacta 300
acacagtggc agtgttaaat gaagatgctg tctacaaggt agataatata ctgtttgata 360
ctcaaaacat ttttcatttt gtttaaagta gaagttacat aattctatat tttaagtct 419

<210> 408
<211> 523
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(523)
<223> n = A,T,C or G

<400> 408
acatttgatg ttatgtgaat gttgagtttt tttcttctaa ttttcacttc agcagtgttt 60
agggctttca gatgccttat tccagtgtga acagaaaaag ttcatatttt atgtggttaa 120
tgctttgatg tgtcacataa agagtagttt gtagaaaatg ttggcacaat tttaacttct 180
tagtggcttg tgacattata tattatatat atatgtatat atatctttat aacattcctg 240
tgtttagtag tgtaaatgtt ctgggcaagt tttaatattt tgaatgcctt tggatattcc 300
agcaataaag gcatcatgtt ctgcaatagg atttcttact catttaccta ttttaacact 360
aaaatagacc acaactgagc acaaattcct tttataaatg ttatagaagc agggaagaat 420
aataaacaca tttgtgaatt gtggttcagt ttatttatct ttagggaagg ctgatcattt 480
atcttatagc acataacccc agcctcttat tcattatggn taa 523

<210> 409
<211> 191
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(191)
<223> n = A,T,C or G

<400> 409
accccgtagt gatgagcact gactggttca ctggccacat tttagttctt cataataata 60
ggccacaaaa gggctctgtg gtttgcctcc atgtgcactg gcccctcccc accсctaggg 120
ggcactcagt agctgctgag aaggcctgtc cacgangctg ttggaacccc ttcaataaat 180
acttagaagn a 191

<210> 410
<211> 403
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

<400> 410
acactggcca gtgtgttttt ggcgattaaa cataatcctg tgaatcagat taattcactt 60
gctgagtgtt catttgcggc atccctctgt tgggtcttgg gggccctcca cgacctcgtg 120
gggctccccg tggtccactc tgcccagagc ctcgcttgaa attctgctga tatccatccc 180
gttgatagcc agagtaatcc cggggagcac tgaactgaga ctgtgtataa ccactgtttg 240
gagtgttaga gaatgaaggg cggtaaccat catatcctcc tctgaatcca ttggcagggc 300
cccggtatcc attcatcaag cctctagcac cacgggagcc tccacgagac acaccacgac 360
tattgtaata gggctgattg ctacgtggaa atccagtgnt ctg 403

<210> 411
<211> 384
<212> DNA
<213> Homo sapien

<400> 411
acgtgaaatc ataacaacat gttctcttgt gtttggcttc tcttgctcag catgatattt 60
ttacggttca cccatattgc atgtatcagg aatataatcc tttttattat tgagtagtgt 120
tctattgtat gtatatacca cagtttattt ctcccttcat cctttgctag attttggggt 180
tttttcacat tgcgctattc aagtataaac ctgctctcaa cattcatgtg caagtctttg 240
agtggacata tatttgccgt ttctcttgag tgaatgcacc ttgttgggtc acgtggctta 300
atttaaaaaa atttaatcca ctgtggtgca tatgtagtga ttattagtga ttatctcata 360
attttatttt cttgatgact aatg 384

<210> 412
<211> 315
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(315)
<223> n = A,T,C or G

<400> 412
acaatatttc tcctttgaga agataggata tatgattttc ccaaaaatca caactttgaa 60
ggaagactta nttgctgact tcaattatat cctggaactg gcaacttgtg cccttccttt 120
gcttcaaaaa aagtgtaaga aagagtgata agatcaactt taatcattct tggatcttca 180

gcaaattcag gatcaatgta gaaaaacact ggcatatcta cttcctcttg gggattaagc 240
ctttgttctt caaaacagaa gcactgtatt ttattgaaat actgtccacc ttcaaatgga 300
acaatattgt atgna 315

<210> 413
<211> 554
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(554)
<223> n = A,T,C or G

<400> 413
acaggtttca ctattacaaa tatatgatgt taaactaaca aactcatgac cttcaaagat 60
gtcttcgtcc cacgcacaca catttgtaat ttgtgtccat ttgctatttc ccttcttcta 120
taatcttcaa attatatagt tatgcattga gttccctatg catctcaccc atctccttta 180
tctcagcctt ctcatacttt gccattctct tctttctgga aataaccagc acaacaattc 240
cagcaacaac tgctatcacc acaaccacaa taacagcaat aacaccagct tttagaccct 300
gcattgagaa ttcaggtgct ttttcatcaa cataataaat taaagtttga ccaggatcca 360
gatccagttg ttccccattt actgtcaggt gccattttct tagaatgaaa caaggattca 420
cctttaacat ctttttcaaa ataataagcc acatcagcta tgtccacatc attctgagnt 480
ttttgagaag aattttgaac cagatcaata gtgataacat tattctcata caaaatactc 540
gngataaatt ntgg 554

<210> 414
<211> 267
<212> DNA
<213> Homo sapien

<400> 414
accagaaagg cacacgattt tacaatattt gttggaatta ccttactttt taacctcctc 60
atagcagttt tggtttgagt atattgatga aagccaaagt ctggtatcta aaacttgggc 120
caatgtttcc caactggtat atgtcaggct ttcccaatag cttaactgtg accctatacg 180
gatggctttt tagatagttc tatactgctg tattgtgtta gcacttttct ttgtcattaa 240
caacacactt taaatgacat ttggtga 267

<210> 415
<211> 454
<212> DNA
<213> Homo sapien

<400> 415
accggaacct gcagaaacag tgtgagaaat taagtcctgg ttcactgcgc agtagcaaag 60
atggtcaagg ccatggaaaa agcagaaatt taccaagaaa gctgataccc atgtatagtt 120
cccactcatc tcaaatacat ctgctatctt tttaagctaa gtcctagaca tatcggggat 180
aacatggggg ttgattagtg accacagtta tcagaagcag agaaatgtaa ttccatattt 240
tatttgaaac ttattccata ttttaattgg atattgagtg attgggttat caaacaccca 300
caaactttaa ttttgttaaa tttatatggc tttgaaatag aagtataagt tgctaccatt 360
ttttgataac attgaaagat agtattttac catctttaat catcttggaa aatacaagtc 420
ctgtgaacaa ccactctttc acctagcagt atga 454

<210> 416
<211> 370
<212> DNA
<213> Homo sapien

<400> 416
ccgacacggt gccagcgccc tgctgcgtgc ccgccagcta caatcccatg gtgctcattc 60
aaaagaccga taccggggtg tcgctccaga cctatgatga cttgttagcc aaagactgcc 120
actgcatatg agcagtcctg gtccttccac tgtgcacctg cgcggaggac gcgacctcag 180
ttgtcctgcc ctgtggaatg ggctcaaggt tcctgagaca cccgattcct gcccaaacag 240
ctgtatttat ataagtctgt tatttattat taatttattg ggtgaccttt cttggggact 300
cgggggctgg tctgatggaa ctgtgtattt atttaaaact ctggtgataa aaataaagct 360
gtctgaactg 370

<210> 417
<211> 463
<212> DNA
<213> Homo sapien

<400> 417
acactttata tattccaaat tgatcagata tatggtttgc aaattcatct caatctgtag 60
cttatctttt cctcttctta aatcacaagt ttttaaattt tgaagaagtc caatatatca 120
gattttgtct tttatggatg tgctttcggg gcaaagtcca agaacttgtc acctagccca 180
agatcctgaa gatttttctc ctgtggcttt tttcaaagtt atctagtttt atgtatcaca 240
tttaagtccg ttatacattt tgagttaaat tttatataag atgtgaggtt taagtagagg 300
ttcttttttc tcctcgccat gggtgtctaa ttgctctagc ataatttgtc agaaaggcta 360
ttcttcctcc attgaattgc tttttcactt tttcaaaatc agctgagcat atttatatgg 420
gtttatttct gggttctctc atctgttcca ttgacgtatg tgt 463

<210> 418
<211> 334
<212> DNA
<213> Homo sapien

<400> 418
ttagcatttg cttttatttt tttactttga tgccttttca aattggcatg tctttaaagt 60
atttttcttc ctgattaaaa atgtgtgtgt atgtgtgtgt gtgtgtgtat atatatattt 120
ttttaaatca cattaatttt accaagtgaa accaagccat actgtttttg agccaattaa 180
gaaaattgcc atttttaaag tgtagcattt cagggtaaag acccatgaaa tggcttgatg 240
tattctagac tactgaaaga aaaccacttc aaagattttg ttgaaagttt tagtgttgtc 300
tgaaatgcaa gagggaaggt gattggtagt gagt 334

<210> 419
<211> 297
<212> DNA
<213> Homo sapien

<400> 419
acttctttga ccaaggaata ccacagacac cctaccgata gaacagtggc tcagatctta 60
cttgctcctg cttacgaagt attcccaatc actggtcatc tgaccctact tgaacactcc 120
tgaacagtca tgtttttaa aatcttcctt tatatcaagt cagagagtat acttctataa 180
atttcactca tggatgttag gaaatctagt catcttccct gtgattgccc tgttaagtat 240
ttaaccatag ctatcatgtg tttcccaaat cttctctaga ttaaatatct tcagtta 297

<210> 420
<211> 418
<212> DNA
<213> Homo sapien

<400> 420
acgagaggaa ccgcaggttc agacatttgg tgtatgtcct atcaatagga gctgtatttg 60
ccatcatagg aggcttcatt cactgatttc ccctattctc aggctacacc ctagaccaaa 120
cctacgccaa aatccatttc gctatcatat tcatcggcgt aaatctaact ttcttcccac 180

aacactttct cggcctatcc ggaatgcccc gacgttactc ggactacccc gatacataca 240
ccacatgaaa tatcctatca tctgtaggct cattcatttc tctaacagca gtaatattaa 300
taattttcat gatttgagaa gccttcgctt cgaagcgaaa agtcctaata gtagaagaac 360
cctccataaa cctggagtga ctatatggat gccccccacc ctaccacaca ttcgaaga 418

<210> 421
<211> 304
<212> DNA
<213> Homo sapien

<400> 421
acgcctggac ccctgtgact tgcagcctat ctttgatgac atgctccact ttctaaatcc 60
tgaggagctg cgggtgattg aagagattcc ccaggctgag gacaaactag accggctatt 120
cgaaattatt ggagtcaaga gccaggaagc cagccagacc ctcctggact ctgtttatag 180
ccatcttcct gacctgctgt agaacatagg gatactgcat tctggaaatt actcaattta 240
gtggcagggt ggttttttaa ttttcttctg tttctgattt ttgttgtttg gggtgtgtgt 300
gtgt 304

<210> 422
<211> 578
<212> DNA
<213> Homo sapien

<400> 422
actgtgcagg cagattcaca gggtggtggt aaagcatcca caatggctct ggcagcatca 60
ggatcacact tgaaggggct ctcagacaaa gttgtattca tgcaactgat tccttttcca 120
ttcgttttct tagtcactaa tgctttccaa tggtcatgag tgcttttaat aatatcaatg 180
gcaaagtcct tatctttaaa ttctgcatta aacgcaaact cattttctgg ttttccatca 240
ggaaccttat accttctaaa ccagtccaca gtagcttcta agtagccagg tttcagccgt 300
ttgacatcat tgatatcatt ataattggct gcatcaggat catccacatt aatggcaatg 360
actttccagt cggtttcccc ttcgtcaatc atagccaata tgcctagaac tttcaattat 420
ttatttcacc tcttgcacat accttgcttc caatttcaca cacatcaatt gggtcattgt 480
caccacaaca gccagtatgt ttatcattgt gccctgggtc ttcccaagtc tgagggatgg 540
caccatagtt ccagatatat cctttatacg ggaacaaa 578

<210> 423
<211> 327
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(327)
<223> n = A,T,C or G

<400> 423
acagtatatt tttagaaact catttttcta ctaaaacaaa cacagtttac tttagagaga 60
ctgcaataga atcaaaattt gaaactgaaa tctttgttta aaagggttaa gttgaggcaa 120
gaggaaagcc ctttctctct cttataaaaa ggcacaacct cattggggag ctaagctagg 180
tcattgtcat ggtgaagaag agaagcatcg tttttatatt taggaaattt taaaagatga 240
tggaaagcac atttagcttg gtctgaggca ggttctgttg gggcagtgtt aatggaaagg 300
gctcactgnt gntactacta gaaaaat 327

<210> 424
<211> 384
<212> DNA
<213> Homo sapien

<400> 424
acgaaaaata aatctcctta aaaactaaat aaaatgcact gtattcttac agttaatgtt 60
tataactata gtaaaaaatt aatatatatc ctattacata aatgttattt cttaggtgtt 120
ccattaagaa gagcaataga ataatgctaa aaaataatgc ctataaatct tcagagtata 180
aagacatcca ttcagaaaca aaaattagca ctaaattttt tataaaatag accagatgac 240
aaaatttatt ttatttttaa acagtggttt tgacacaaat tatgttattg aaaagcatta 300
ttaatgttta atttatttaa aattttggaa tttgccattt ctcagagaat gatcaggcct 360
taggaaatta atacagtagt agta 384

<210> 425
<211> 255
<212> DNA
<213> Homo sapien

<400> 425
actatcaggc tttgtgctga tttcctgaac aaactgcatt atattatgaa aacaaaagga 60
aaagaagaaa taataaaaac tatactccca tatttcactt acagtgtttg agttcctgga 120
aggacctata taatggaggc agcattcaaa caagaaatta tgccaatcaa ctgtcaaatt 180
ttcactataa ttttcctaaa aaggcgtttt tcccccaata tctattaatc tcaaagaaac 240
ataagttgtg aatgt 255

<210> 426
<211> 196
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(196)
<223> n = A,T,C or G

<400> 426
acatgaantn nccaggccca cacagccaga cagcaacaga accaagacct agggctcttc 60
actcctgtta catcacacca tggcaatgat tttacattct ccaactgatt caaatcatat 120
ggcagctagg gatttggggg ctccatgttt tatttcaatt gcaagttcaa gatttctttt 180
tatctttgtg ggctga 196

<210> 427
<211> 163
<212> DNA
<213> Homo sapien

<400> 427
acagaagatc catggaggca agtgctgtca ggaaggacac tgcctccctc caccctccca 60
aatgtcacca ccaagttcct tcaggtgaga cctcacacaa tgtcaagtgc tttctaggaa 120
atactaagat caggttgaga gattctgctt ggtctagtca atc 163

<210> 428
<211> 315
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(315)
<223> n = A,T,C or G

<400> 428

nactgagtan agatgctggg gaatgtgcaa tatgccttga agaattgcag cagggagata 60
ctatagcacg actgccttgt ctatgcatat atcataaagg ctgcatagat gaatggtttg 120
aagtaaatag atcttgccct gagcaccctt cagattaagc gtcagcttcc tgttttatag 180
gttttcttgt cttgacaaga tgcttgaaaa accaagagga tatgaaaatc tgtctctgga 240
gaaacaaaga cgcaggcata ctcagccaga aatctgagtt ttgtgagact tggtaataca 300
gagatggaca atcgt 315

<210> 429
<211> 131
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(131)
<223> n = A,T,C or G

<400> 429
acagttaggn actagaacat ttgttaagcc tcccaaagta gngtgcatgg aagattctag 60
agtgtccagc tcttgcacta caaatgtaat aataacagaa taaatacact taccctgatg 120
atattgaggg t 131

<210> 430
<211> 503
<212> DNA
<213> Homo sapien

<400> 430
actgattttt aataaaagaa ataaggttca aagtttagca caacaacaca gcaataagaa 60
gctgacaact tggataaaaa tacaagaaag taacacagag cccaggctac ccattattta 120
ctgtgtgcat acaggaatgc tatacttcag atgtataaat tagagactga ttttaagtta 180
ttaatttaac tactttttgt ccactgtgct aaactaaatt ttatactaat gtgctactgc 240
gtaaacactt caaagcaatc ttcattaaaa tgctgcaaag aaaaacaaga atacacatca 300
tccaaaacta aggatgtcat tgcagttcac agtttgtata ataaataccc tccctttcaa 360
tcactactaa gatcactaca tcctatctac tcatcagcac aaccttgaag caacttatac 420
ttacaaatat tagcaatgca gccaaacatt tgttttttgc aaagcaacta gtaaaaatca 480
agaattttaa ttaagacggt gca 503

<210> 431
<211> 207
<212> DNA
<213> Homo sapien

<400> 431
acaagtgtgg cctcatcaag ccctgcccag ccaactactt tgcgtttaaa atctgcagtg 60
gggccgccaa cgtcgtgggc cctactatgt gctttgaaga ccgcatgatc atgagtcctg 120
tgaaaaacaa tgtgggcaga ggcctaaaca tcgccctggt gaatggaacc acgggagctg 180
tgctgggaca gaaggcattt gacatgt 207

<210> 432
<211> 485
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(485)
<223> n = A,T,C or G

<400> 432
aaaaaaagta atggaaaaat ggttgcaggt ttaatcncaa aangaactta attttngtng 60
attttgtttt atctgctaaa acactaatat ctataaatat gaactgacag catcgttcta 120
aatttacttc tgaagagctg tcgagacttc aataaaatat aagcaagtta ctggatcata 180
tttatggact gctgaattaa ctacccgaaa agtatcagtt actttcaaag aacacaaaac 240
aaagtgaacg tggaaaaaag ccttctttgc aaaagtcctt ttattagtcc tatcctctaa 300
aattccaagc cacagagcct tgatattcct ggattctgtt ttaagtaacc ttagttttaa 360
atatgacact tgggatatgc acaatgggaa agggtaggat atgtgaacaa aatttaattt 420
ctttttcca aaggnagnca ttttctttaa atncatccta tccacttttg cccacttccc 480
catgt 485

<210> 433
<211> 280
<212> DNA
<213> Homo sapien

<400> 433
actgtcacta caatattaca ttctgcaaat gttattctgt tgtatcagat acaaaatttt 60
agtgaggtat ctctaaggca catagtagaa aacaaaattg gttaattact caagttcctt 120
tcactgtgat ttggaaatga tttaatcttt atagaatgag aacctttttt ggactagctt 180
ttttattaaa atggctcaat ttgtgttgat aaggattgca ttaatattta atagtgcttg 240
cttttcctct gggcacacca ttttgatcat taaccagagt 280

<210> 434
<211> 234
<212> DNA
<213> Homo sapien

<400> 434
ctttgctgcg catcaggtgc tttaagcttc ggaacaactg tgcaggattc tattttagta 60
ttctggaagc atcattgagg aagtagtcca gtgaagttag ctctaaaaaa actctttact 120
ctaacaatta aaagaaatat gccaaaggat ccataaggga tgaataaatt attaaactat 180
taagaagttg ctataaatat gcagtgttaa ttcaataatt cataacggac tggt 234

<210> 435
<211> 330
<212> DNA
<213> Homo sapien

<400> 435
acctcccgtg tcaccagttc ccacagaagc actgcaaaac tccacatgtc tgctgagcgt 60
ctgtttgtgt cttcaggctt cttctgcaga gcttcggggg ctacccaggc aggtgcatac 120
atgcgaccag gacattggaa agagaacttg acatcagcca tgctaattcg ggcagtcatg 180
tcctcatcaa tcattacact acggctattg agtgcatgtc gtgggatgag gggctctagt 240
gtgtgtagga aagccatgcc ccttgccatg tccaaagcaa acttcacagc ctggctctgg 300
tccacgacga aattggtgcc ttcatgtagt 330

<210> 436
<211> 311
<212> DNA
<213> Homo sapien

<400> 436
acaactttac aatggaattg tatttcaatg attattttga tatcagatta aaccttccaa 60
aaagttacac ataattcagg tctatttttt ctaccagtaa gagttctgct aaattacaaa 120
accccataat cacagtgttc agtttttaaa aaattaaaca cacagtaatc ctgtcaatgt 180
taatcaaaat caaaacttcg gaatgccgtg gcatttatgt gaccaatctg agttttagat 240

acaaatacca gctgtttatc ccatgaacca tttttcctag gctgaggctg tgaaaaatcg 300
aaagtcggcg t 311

<210> 437
<211> 355
<212> DNA
<213> Homo sapien

<400> 437
actagtggat gggggtcagg gtgtcactcc aaggccctct acagacccag agaagaggaa 60
agtcaaaaaa gccagatatg agactgctga agtggtgtta agaaatatag gcaaggtaaa 120
gggaacaaga tctgggctcc ctcctacttg tgtccctcac tggacctcag acaccctacc 180
tctaagactg gttcttagaa ggctgaacag taaggagcat tccaatagct tctgaaactc 240
ccaaggctgt ttcaagtagt cgaaagccat ccctggactg ttcaggtgcc ttttctattt 300
cccacctgag ctctctgccc tttctttgag cctcacaggt ttccagaatt acagt 355

<210> 438
<211> 431
<212> DNA
<213> Homo sapien

<400> 438
acagtaactt taactttaca tagagctgag ataaaaataa agctttctta caaattacat 60
tttttttcca gtgaattact tttgcagtaa aaatagctgc tacataaatc cctcctgatc 120
tctgaaaagg agttgcatat ttccaaaaat aatattctta ttttaatcac acagaagaac 180
gtggagcaca ggaaggaaat ggctgggtgg tcagagagag gtgagctgtc ggagaaacac 240
agttaaacta aaaaataaaa tccattttgt gtataaactg acttaaacgc atgcaaagaa 300
gtggaaaaca tatgccattt gtcaagaaaa atactgcttt atagctttta ctttacaatt 360
aaaggagaaa gcagaggcca gatataagcc cagataataa catttaagtt tctcataaaa 420
ctcccaaatg t 431

<210> 439
<211> 170
<212> DNA
<213> Homo sapien

<400> 439
actgtcataa aaaacagtgg agctctgtat tagaaagccc ctcagaactg ggaaggccag 60
gtaactctag ttacacagaa actgtgacta aagtctatga aactgattac aacagactgt 120
aagaatcaaa gtcaactgac atctatgcta catattatta tatagtttgt 170

<210> 440
<211> 400
<212> DNA
<213> Homo sapien

<400> 440
acgtaaaaag aacatccttc ccatcttcaa ggtcaagatt gaacgctgac tcctgcagga 60
agtcttccag gattcccagg caggaatgat ggctccctgt ccctgtagct ccaggagttc 120
ttgcttcacg cacgcctcac ataccagact gaatgttggc aggaggagtg accaggtcgg 180
tcatctgtgt ccctaccacc tacaacaggc cagcaatcta cccgtgtgtg tttgttggac 240
agaattaacc atgatgggcg gccgagggcg cctggagcta tttgggggct tggagagaac 300
ctcttaggag agtgtcaggc tctaggccag tgtcaccaga ggaggtcagt ctcagtcctt 360
ggagtggtgg gatggaaacc agacgggact ggcatggtcc 400

<210> 441
<211> 204
<212> DNA

<213> Homo sapien

<400> 441
acctagttac ttcttaagat caggtgtata aaactgtgga gtggagcggt atggtatgga 60
atgacttgga atgtaagctg tcagggagaa aatgttgtta cacttttgct aagatctggg 120
ggtttcttca tattcctgct gttggaagca gttgaccaga aatgcttgcc agtactgcca 180
aagcactgct gtgaaatgtg aagt 204

<210> 442
<211> 649
<212> DNA
<213> Homo sapien

<400> 442
acatttaatt ttttacaaca ttttctccct agagatataa tttagatatt cctatcttca 60
aagtaaaaat caaaatagga aataagcata gaaacagcct attggcagtg gttacacctg 120
catggtattt atgagtctcc aaactattgg aaatttattt caaccaaggt tctcttaagt 180
cttcattact tgggtgtaac tcgagagaaa actaatttat atcaatttac agtttagtgg 240
tcatgatcag gggaaagtga tactcttcca ctgactacaa gtcattgcag aggcagttta 300
gaacttttcc tttattccta atatacagga caaaccttgc cgacatctca ctacctcaaa 360
aatcaaattt aaatgaagta tccaggagta gcctaaagaa tgagtgtaat ctggatggat 420
tttagtctaa atttatgcct tgctcttcag taaagtatag taactccaga tatatgttcc 480
acagatgcaa taatttctgt tccttgttcg gtgcagaata taatttatac ttcctgaaat 540
caactttgtc tattcatgaa aatagctgct ttttatttgc ctttgtctca ctttgaatat 600
atatgatcca caggttacag acttttccaa taactacatt tcaacttgt 649

<210> 443
<211> 346
<212> DNA
<213> Homo sapien

<400> 443
acgtgggatt gaaatgcaca tacatgtttt tgctaagagc acatacattt cattctcctc 60
actttgttca taacctcagc attgtcagat aacctcagtg agttaactca aagcctttta 120
ttatggaaag aactggcaca gttacatttg ccagtggcaa catccttaaa aattaataac 180
tgatgggtca cggacagatt tttgacctag ttcctttttc ttttagagca aaaagaactt 240
ttacctcggc atccagccca accectaaag actgacaata tccttcaagc tcctttgaaa 300
gcaccctaaa cagccatttc cattttaata gttggatgcg gattgt 346

<210> 444
<211> 425
<212> DNA
<213> Homo sapien

<400> 444
accaatttcc ttttacagta aaggggcttt tcctgttgct tgttgaaccg gttcccagct 60
gcccattacc accaagccca aaagagtaaa ttcgtcctga tgaaggaaca aaagcagaag 120
tgtgctgccg tccacaagca atctcagtga caatgcttcc cataagttca aaaactttcc 180
ttgggtttat ttcatgactg gtagaattat ggcccaactg accataccct ccagctccaa 240
aagtaaacac tccaccttcc ttggttagag cagcagtatg atcttctcca caacaaatat 300
aaactatttt ctgagatctt agtgacttta gtaaattagg aacataccta tcattttcat 360
cattaagacc tagctgacca aacttgttgc gtccccatcc aaagatagct ccagaaaggg 420
tgagt 425

<210> 445
<211> 210
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(210)
<223> n = A,T,C or G

<400> 445
nactgtccca atataaaaca gtaattattt gacctttgca ctgtttgtct ggtccttttc 60
agtttgattg catataaatg tggaacttga tagatctcta tatttttaat gcacttgtga 120
taaactggca gcagggttag acattacttt caaagcttga ggtagaccga gtcagcatgc 180
tagacaggct tctctctcta accaaaactg 210

<210> 446
<211> 326
<212> DNA
<213> Homo sapien

<400> 446
tcgaaagacc cctgtaaaag agcccaacag tgaaaatgta gatatcagca gtggaggagg 60
cgtgacaggc tggaagagca aatgctgctg agcattctcc tgttccatca gttgccatcc 120
actaccccgt tttctcttct tgctgcaaaa taaaccactc tgcccatttt taactctaaa 180
cagatatttt tgtttctcat cttaactatc caagccacct attttatttg ttctttcatc 240
tgtgactgct tgctgacttt atcataattt tcttcaaaca aaaaaatgta tagaaaaatc 300
atgtctgtga gttcattttt aaatgt 326

<210> 447
<211> 304
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(304)
<223> n = A,T,C or G

<400> 447
ncntcnaggt acatgctaga agtctgatgt ngtnngtaac acagaaacat acacagtctt 60
catattcaaa gtcttcacng ggatgtcgtt ctgtaatttc ctgcgtttgg gtctcttcca 120
gaaacagctt tagcttcctg ctccgaaggc caaacacctt ggctgcttca tacagaagac 180
cttggtgggt gagtccattc tgcccaagtg ggttttcaag caggagagtg cccactgtcc 240
ccattaaaca ctcttgtggc tttgcattca ggagctgtag gttgatatac tgacaaggaa 300
gagt 304

<210> 448
<211> 203
<212> DNA
<213> Homo sapien

<400> 448
acatgaaagc ggcaatgcgg taaaaagcga attcttaccc aaggtcagaa ttttttatta 60
agcgcatttt cattagttgg acaaacaacc ttataaaccc ttatgtcaaa ccatataatg 120
tgaagaatct ccatgggaga gatttttttt caccettcag aattatcttt ttcccctaag 180
accttcatat gaatcttcct tgt 203

<210> 449
<211> 481
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(481)
<223> n = A,T,C or G

<400> 449
acttgttcta taatactctg atgtttcctt aaattcctga acaacattct gtttactaaa 60
tttcttttct tcctttattc acaccaaatt ccaccctata atagaagcta attatttcag 120
aaagcttttt agtgatcatt tattactttg tgtttactag atattaattc taagatgaat 180
tcctttagaa ttttagaaaa aattattcta gacaacaatc aaagtaaagg atacatccag 240
cattgaaacc ataagccggc aagtctccag gttaaaaggt ttgtatcctc cagcaatgcc 300
agactgtgtc agacatctct gcaattcatc agcatctatc tgcccatcct gtccagctac 360
agcagcaaag taaccataca gcggatcctg agtttgtccg ggaaacgcag gccctccggg 420
agcccctcca tactgcatct tgagttgaag tcttatangt agaagctggt gatccttaga 480
g 481

<210> 450
<211> 296
<212> DNA
<213> Homo sapien

<400> 450
acatggttta atacaacaac aaaaaaattt aatcaagtga aacgtaataa actgaacaat 60
aaacactcaa aacattttcc attggaaaca tgtaaagaca atatgaggtt ttgttaccat 120
cttactgcaa ttttcttatg tgttactagt ctacataccc catgttttct gtaatcatgc 180
agatgtgaat ggaagtttga atgattaaat aaatgaaaag tccgtttact gcagggaatc 240
atttcacaag gcagccaaac cgggtttaga gaacaaaact attcaagaaa ttctcc 296

<210> 451
<211> 294
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(294)
<223> n = A,T,C or G

<400> 451
acatgntcca aggcacgcgn ctgtgaactt cctctgagtg aaggcatccc ctccagcacc 60
tttcagcctg ctagttagga cgacccgccg ccaccctcca ggacctccag ccctgcactg 120
cctttcctct cttttaaata attcttcatt gagttctaat atgtaaaaaa aaagtttact 180
gtaaagtttg caaataanga aatttttttt aaaagtcctc agtaatctta ccagtaacaa 240
ttgttatggg cacatttgct tttggaagat ttcttttgta tgcatgggat aagt 294

<210> 452
<211> 129
<212> DNA
<213> Homo sapien

<400> 452
acttttagat cacaaatttg cctttaagta acacataata cacttaaggc agatttgcct 60
tacaggtggc ctcagcttct aaacaccact acactgcttt atataaaaaa caaaaatcac 120
atagaagag 129

<210> 453
<211> 151

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(151)
<223> n = A,T,C or G

<400> 453
actctcaann tgtatttagg tgccaacaca tttaggatca ttgngnnttc tcagtgaatt 60
gacctttta tgagaataaa atgtctattt ctgaaatgtc cctatttctg gaaatgttcc 120
ttatactaaa gtccaacttg tgtggattan t 151

<210> 454
<211> 119
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(119)
<223> n = A,T,C or G

<400> 454
tgctgatgna gcatgctttt taaatccttt aaaaacactc accatataaa cttgcatttg 60
agcttgtgtg ttcttttgtt aatgtgtaga gttctccttt ctcgaaattg ccagtgtgt 119

<210> 455
<211> 515
<212> DNA
<213> Homo sapien

<400> 455
accttataaa gttccttttc atccttctct gtcttcaact gacattcaag ttgttctctt 60
tcatgttgtg ccttcttgag tttggccttt aaactgtcta attcggtttc tttttcaatt 120
gctttatgtg ttactgacac aatatcttcc tcaagctgat gggctttgga tgtagcatca 180
ctgaacctct tcttaaactc ttcattttcc atttttaagc tttgtgttac ttcagtaaga 240
cccttttgtt ctgcttgcag ttggtcacat ctttctttct catggttaag ttctctttcc 300
attctcccaa cttgttctcg aagttgtgct gtttcttttt ccagaacggc aattaacttt 360
aacagttctt ctttttcttt catggtttc tcaattttca actcaagaag gcctgctttt 420
gtggtcacca ctaacatgtc agaatttcct tcatcttcca tagtaagcag ctcttcaact 480
ggagaagaag ctcgaaactg gaaaggtgta cctgc 515

<210> 456
<211> 350
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(350)
<223> n = A,T,C or G

<400> 456
actcccctcc ccaaatagaa acctcaaaga ctgatccatt tcccctaggg cctgggccag 60
gagtagctca ctgctcactg ctgaggagaa aggcacaaga tataatgtca taagagcagg 120
acagtggctc agcctacaga gttccctata ggggaaagaa ggcaggaaat aggcgcaggg 180
tctggtcctg tccctgcacc accctgagca gctagtcttg ggaagggatt acaggccctg 240

```
ggccataggc tgctcgccat tctgctttcc tatcctgttt ctctccctgt gctgctccct     300
tttagccagn gctgagaaat gttcancacc tgaggcaaaa ctgccatagt                350

      <210> 457
      <211> 293
      <212> DNA
      <213> Homo sapien

      <400> 457
gcagggccaa cagtcacagc agccctgacc agagcattcc tggagctcaa gctcctctac      60
aaagaggtgg acagagaaga cagcagagac catgggaccc ccctcagccc ctccctgcag     120
attgcatgtc ccctggaagg aggtcctgct cacagcctca cttctaacct tctggaaccc     180
acccaccact gccaagctca ctattgaatc cacgccattc aatgtcgcag aggggaagga     240
ggttcttcta ctcgcccaca acctgcccca gaatcgtatt ggttacagct ggt            293

      <210> 458
      <211> 500
      <212> DNA
      <213> Homo sapien

      <400> 458
actagactcc agattaccct ttcttaataa atatctcagg gtaaggaaag aaagaaactg      60
tatagatata tttaaaatag agaatacttt ccaagcaata catgatgcct ttcctaaaag     120
actctaaaag aaaaagattc tgtaactctc ttttagcacc aaattattgt ttatcttgct     180
ggatatttta tatgaacagt gttaatttag atgcactaaa gcaaaggtag gcaaactaca     240
accatgagtc aaacatggcc acacccattc atttgctatt gtctaagctg gttttgcact     300
acaactgcag agttgaatag atgcagcaga tcctttacag aaaaagtttt ctgacctcaa     360
ttctaaagta attgtagtag ggagctggag gactttcttt ccctttatgg taattttttg     420
agctacaaaa agagccttgc agaaatgggt gaagggatta atcttttaaa aataaatgct     480
atatattagg aaaataaaaa                                                 500

      <210> 459
      <211> 394
      <212> DNA
      <213> Homo sapien

      <400> 459
ggtgaaaaga cttgattttt tgaaaggatt gtttatcaaa cacaattcta atctcttctc      60
ttatgtattt ttgtgcacta ggcgcagttg tgtagcagtt gagtaatgct ggttagctgt     120
taaggtggcg tgttgcagtg cagagtgctt ggctgtttcc tgttttctcc cgattgctcc     180
tgtgtaaaga tgccttgtcg tgcagaaaca aatggctgtc cagtttatta aaatgcctga     240
caactgcact tccagtcacc cgggccttgc atataaataa cggagcatac agtgagcaca     300
tctagctgat gataaataca cctttttttc cctcttcccc ctaaaaatgg taaatctgat     360
catatctaca tgtatgaact taacatggaa aatg                                 394

      <210> 460
      <211> 279
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(279)
      <223> n = A,T,C or G

      <400> 460
actnccgatt gaagccccca ttcgtataat aattacatca caagacgtct tgcactcatg      60
agctgtcccc acattaggct taaaaacaga tgcaattccc ggacgtctaa accaaaccac     120
```

```
tttcaccgct acacgaccgg gggtatacta cggtcaatgc tctgaaatct gtggagcaaa     180
ccacagtttc atgcccatcg tcctagaatt aattcccta aaaatctttg aaatagggcc      240
cgtatttacc ctatagcacc ccctctagag caaaaaaa                             279
```

<210> 461
<211> 278
<212> DNA
<213> Homo sapien

<400> 461

```
tttggacact aggaaaaaac cttgtagaga gagtaaaaaa tttaacaccc atagtaggcc      60
taaaagcagc caccaattaa gaaagcgttc aagctcaaca cccactacct aaaaaatccc     120
aaacatataa ctgaactcct cacacccaat tggaccaatc tatcacccta tagaagaact     180
aatgttagta taaagtaaca tgaaaacatt ctcctccgca taagcctgcg tcagattaaa     240
acactggact gacaattaac agccaatatc tacaatca                             278
```

<210> 462
<211> 556
<212> DNA
<213> Homo sapiens

<400> 462

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aacgtccaag ggggccacat cgatgatggg caggcgggag gtcttggtgg ttttgtattc 60
aatcactgtc ttgccccagg ctccggtgtg actcgtgcag ccatcgacag tgacgctgta 120
ggtgaagcgg ctgttgccct cggcgcggat ctcgatctcg ttggagccct ggaggagcag 180
ggccttcttg aggttgccag tctgctggtc catgtaggcc acgctgttct tgcagtggta 240
ggtgatgttc tgggaggcct cggtggacat caggcgcagg aaggtcagct ggatggccac 300
atcggcaggg tcggagccct ggccgccata ctcgaactgg aatccatcgg tcatgctctc 360
gccgaacccg acatgcctct tgtccttggg gttcttgctg atgtaccagt tcttctgggc 420
cacactgggc tgagtggggt acacgcaggt ctcaccagtc tccatgttgc agaagacttt 480
gatggcatcc aggttgcagc cttggttggg gtcaatccag tactctccac tcttccagtc 540
agagtggcac atcttg                                                 556
```

<210> 463
<211> 659
<212> DNA
<213> Homo sapiens

<400> 463

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cacactgtgc ccttccagtt gctggcccgg tacaaaggcc tgaacctcac cgaggatacc 60
tacaagcccc ggatttacac ctcgcccacc tggagtgcct ttgtgacaga cagttcctgg 120
agtgcacgga agtcacaact ggtctatcag tccagacggg ggcctttggt caaatattct 180
tctgattact tccaagcccc ctctgactac agatactacc cctaccagtc cttccagact 240
ccacaacacc ccagcttcct cttccaggac aagagggtgt cctggtccct ggtctacctc 300
cccaccatcc agagctgctg gaactacggc ttctcctgct cctcggacga gctccctgtc 360
ctgggcctca ccaagtctgg cggctcagat cgcaccattg cctacgaaaa caaagccctg 420
atgctctgcg aagggctctt cgtggcagac gtcaccgatt tcgagggctg gaaggctgcg 480
attcccagtg ccctggacac caacagctcg aagagcacct cctccttccc ctgcccggca 540
gggcacttca acggcttccg cacggtcatc cgcccccttct acctgaccaa ctcctcaggt 600
gtggactaga cggcgtggcc caagggtggt gagaaccgga gaaccccagg acgccctca  659
```

<210> 464
<211> 695
<212> DNA
<213> Homo sapiens

<400> 464

```
accttcattt gaccccatca gcttcagggc cttctttaca tttccactgg cctgatccat 60
```

gtatgcaatg ctatttttgc agtgatatgt gatgttctgg gaagctcggc tggagagaag 120
tcgaaggaat gccagctgca catcaaggac atcttcagga agttcaggat tgccgtagct 180
aaactgaaaa ccaccatcca tggactctcc aaaccaaacg tgtttcttct cagcactaga 240
atctgtccac cagtgtttcc gtggaacatt caaaggattg gcacttatgc atgtttcccc 300
agtttccata ttacagaata ccttgatagc atccaatttg catccttggt tagggtcaac 360
ccagtattct ccactcttga gttcaggatg gcagaatttc aggtctctgc agtttctagc 420
ggggtttta cgagaaccat caggactaat gaggctttct atttgtccat taacagactt 480
gagtgaagtc ataatctcat cggtgttgat tttgaaatcc attggttcat ctccataata 540
cggggcaaaa ccgccagctt tttcacctcc aatcccagca atggcagcgg ctccaacacc 600
accacagcaa ggaccagggg caccaggagg tccaggaggg cctggttgcc ctgggtggcc 660
tggggagccc tcagatcctc tttcacctct gttac 695

<210> 465
<211> 73
<212> DNA
<213> Homo sapiens

<400> 465
caggtccaga gctcccaggt ttccaggttg cagtccctcc agtcccagag ctcccagggt 60
ttcggtttcc agt 73

<210> 466
<211> 507
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G

<400> 466
agcactggca gaggnagcca aatatagtga tgtgcgccag agataagtat tctcctctcc 60
aagcatattg ctatacaaga ctttaaagac ttcataaaag ccaaacttgc agagtccctg 120
catggagtag ccaaggaaag tcggagccca tcctttagcc aaaccacgaa caccatcctc 180
tttaagtgta actgagaatc cgttaaatat gcccttgtac ttttgggggt ccacctgcat 240
acggcatttc actaaatcca ggggaaccac agcagtgtgt gtcagaccac aacttaagac 300
cccaccaaag ccacacagtg cataatactt cgcggagcca aattcacaac tgtactcttc 360
cacggcggcg gctgccaggt tgcgagggcg gcggggctgg cccgtgggcc ctggggagct 420
gctgcggagg tccccgagac catcgtgcac canctgcaga tgtggcgtgt tgaaggggtt 480
cgcccgcgcc aggtgcgcca cggacga 507

<210> 467
<211> 183
<212> DNA
<213> Homo sapiens

<400> 467
cctcatgagc taccgggcca gctctgtact gaggctcacc gtctttgtag gggcctacac 60
cttctgagga gcaggaggga gccaccctcc ctgcagctac cctagctgag gagcctgttg 120
tgaggggcag aatgagaaag gcaataaagg gagaaagaaa aaaaaaaaaa aaaagggcgg 180
ccg 183

<210> 468
<211> 129
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(129)
<223> n = A,T,C or G

<400> 468
gcggccgcgt cgaccggcgc cgtcgggcnc cgggccgggc catggagctg tggacgtgtc 60
tggccgcggc gctgctgttg ntgntgctgn tggtgcagtt gagccgcncn gccgagttct 120
acnccaang 129

<210> 469
<211> 243
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(243)
<223> n = A,T,C or G

<400> 469
gcggccgcgt cgacnggcca tggagactgt ggcacagtag actgtagtgt gaggctcgcg 60
ggggcagtgg ccatggaggc cgtgctgaac gagctggtgt ctgtggagga cctgctgaag 120
tttgaaaaga aatttcagtc tgagaaggca gcaggctcgg tgtccaagag cacgcagttt 180
gagtacgcct ggtgcctggt gcggagcaag tacaatgatg acatccgtaa aggcatcgtg 240
ctg 243

<210> 470
<211> 452
<212> DNA
<213> Homo sapiens

<400> 470
cctcaagtac gtccggcctg gtggtgggtt cgagcccaac ttcatgctct tcgagaagtg 60
cgaggtgaac ggtgcggggg cgcaccctct cttcgccttc ctgcgggagg ccctgccagc 120
tcccagcgac gacgccaccg cgcttatgac cgaccccaag ctcatcacct ggtctccggt 180
gtgtcgcaac gatgttgcct ggaactttga gaagttcctg gtgggccctg acggtgtgcc 240
cctacgcagg tacagccgcc gcttccagac cattgacatc gagcctgaca tcgaagccct 300
gctgtctcaa gggctcagct gtgcctaggg cgcccctcct accccggctg cttggcagtt 360
gcagtgctgc tgtctcgggg gggttttcat ctatgagggt gtttcctcta aacctacgag 420
ggaggaacac ctgatcttac agaaaatacc ac 452

<210> 471
<211> 168
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(168)
<223> n = A,T,C or G

<400> 471
cttctccgct ccttctanga tctccgcctg gttcggnccg cctgcctcca ctcctgcctc 60
taccatgtcc atcagggtga cccagaagtc ctacaaggtg tccacctctg gcccccgggc 120
cttcagcagc cgctcctaca cgagtgggcc cggttcccgc atcagctc 168

<210> 472

<211> 479
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

<400> 472
gccaggcgtc cctctgtctg cccactcagt ggcaacaccc gggagctggt ttgtcctttg 60
tggagcctca ncagttccct ctttcanaac tcactgccaa gagccctgaa caggagccac 120
catgcagtgc ttcagcttca ttaagaccat gatgatcctc ttcaatttgc tcatctttct 180
gngtggcgca gccctgttgg cagcgggcat ctgggtgnca atcgatgggg catcctttct 240
gaagatcttc gggccactgt cgtccactgc catgcagttt gtcaacgngg gctacttcct 300
catcgcagcc ggcgttgtgg tntttgctct tggtttcctg ggctgctatg gtgctaanac 360
tgagagcaag tgtgccctcg tgacgntctt cttcatcctc ctcctcntct tcattgctga 420
ggntgcagnt gctgaggtcc gccttggtgt acaccacaat ggctgagccc ttnctgacn 479

<210> 473
<211> 69
<212> DNA
<213> Homo sapiens

<400> 473
gagcgatgga gcgtgggtag ggagggtcca cagtgtccac tcgccgtgtg cgaaggttga 60
ctcggtagt 69

<210> 474
<211> 155
<212> DNA
<213> Homo sapiens

<400> 474
gccgccactg ccgggagagc tcgatgggct tctcctgcgc gccgcccggt gtctggccga 60
gtccagagag ccgcggcgcc tcgttccgag gagccatcgc cgaagcccga ggccgggtcc 120
cgggttgggg actgcagggg aaggcagcgg tggcg 155

<210> 475
<211> 282
<212> DNA
<213> Homo sapiens

<400> 475
ggcttcgacg ttggccctgt ctgcttcctg taaactccct ccatcccaac ctggctccct 60
cccacccaac caactttccc cccaacccgg aaacagacaa gcaacccaaa ctgaaccccc 120
tcaaaagcca aaaaatggga gacaatttca catggacttt ggaaaatatt tttttccttt 180
gcattcatct ctcaaactta gtttttatct ttgaccaacc gaacatgacc aaaaaccaaa 240
agtgcattca accttaccaa aaaaaaaaaa aaagggcggc cg 282

<210> 476
<211> 434
<212> DNA
<213> Homo sapiens

<400> 476
ctccaggaca gcgtccagct tggtgtcgtt gaagacgaag tggagcggat ggttgtagaa 60
acgagtgatg gtgctgagcg gcgtgcagtc ttcgggatcc acgaaggcca agtccttgag 120

gtagagcatg tccacgatgt tggagcgctc ctcctcgtac accgggatgc gcgtgtggcc 180
gctctgcatg atgctggcca ggacgccgaa gtccagcacg gtgctggcgt ccagcatgaa 240
gcagtcttcg aggggcgtga gcacgtcctc cacggtccgg cagcgcagca cgcccttgct 300
gagatcgctg taggggtcgc cgccgccgcg cgccagctcc agcacccgct cccgcagccg 360
cccgggccgc gccgccagct ccagcagctg ccccacgggc agcgcgacgg gcagagtgag 420
caggacggcc aggc 434

<210> 477
<211> 314
<212> DNA
<213> Homo sapiens

<400> 477
ggcgggcgct agctggctcc gggcagctcg gccttggggg cttcggggcc ccgagacgcg 60
gggcgtatga gtggggcgtg cgctccacgc ggaagtcgga gcctcctccc ctggataggg 120
tgtacgagat ccctggactg gagcccatca cctttgcggg gaagatgcac ttcgtgccct 180
ggctggcgcg gccgatcttt ccgccctggg accgcggcta caaggaccca aggttctacc 240
gctcgccccc tcttcacgag catccgctgt acaaagacca ggcctgctat atctttcacc 300
accgttgccg cctt 314

<210> 478
<211> 317
<212> DNA
<213> Homo sapiens

<400> 478
aacagagtga tcattccagt taagcggggc gaagagaata cagactatgt gaacgcatcc 60
tttattgatg gctaccggca gaaggactcc tatatcgcca gccagggccc tcttctccac 120
acaattgagg acttctggcg aatgatctgg gagtggaaat cctgctctat cgtgatgcta 180
acagaactgg aggagagagg ccaggagaag tgtgcccagt actggccatc tgatggactg 240
gtgtcctatg gagatattac agtggaactg aagaaggagg aggaatgtga gagctacacc 300
gtccgagacc tcctggt 317

<210> 479
<211> 171
<212> DNA
<213> Homo sapiens

<400> 479
aggtgctttg ctagatgctg tgacaggtat gccaccaaca ctgctcacag cctttctgag 60
gacaccagtg aaagaagcca cagctcttct tggcgtattt atactcactg agtcttaact 120
tttcaccagg ggtgctcacc tctgccccta ttgggagagg tcataaaatg t 171

<210> 480
<211> 65
<212> DNA
<213> Homo sapiens

<400> 480
cccccagtgg aaggctccca ccctggtaga tgaacagccc ctggagaact acctggatat 60
ggagt 65

<210> 481
<211> 207
<212> DNA
<213> Homo sapiens

<400> 481

cacagcgtgc tctgcggggt cactccccact ttgttagtga tgtggttatc tcctcagatg 60
gccagtttgc cctctcaggc tcctgggatg gaaccctgcg cctctgggat ctcacaacgg 120
gcaccaccac gaggcgattt gtgggccata ccaaggatgt gctgagtgtg gccttctcct 180
ctgacaaccg gcagattgtc tctggat 207

<210> 482
<211> 319
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(319)
<223> n = A,T,C or G

<400> 482
cacactgtgc ccttccagtt gctggcccgg tacaaaggcc tgaacctcac cgaggatacc 60
tacaagcccc ggatttacac ctcgcccacc tggagtgcct ttgtgacaga cagttcctgg 120
agtgcacgga agtcacaact ggtctatcag tccagacggg ggcctttggt caaatattct 180
tctgattact tccaagcccc ctctgactac agatactacc cctaccagtg cttccaaact 240
gcacaacacc cnagcttnct cttccagnac aagagggtgt cctggtccct ggcctacctc 300
cccaccatcc agagctgct 319

<210> 483
<211> 233
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(279)
<223> n = A,T,C or G

<400> 483
acaggcccag tggcgcctag ccttcagctg ctgggctctc ccgagcctgc cttagcccat 60
acaaccactt gatcacgcgg gcattgcgct ccaccaccga cacgccatag ggaacgcgct 120
cccgggcccg ctcctcaaca gtcaccgagc tgcggcggga gcagcccccct tcagagctgc 180
ccggcccagc actgggccct gccagggaca cnatatccga gctggcccgt gcc 233

<210> 484
<211> 194
<212> DNA
<213> Homo sapiens

<400> 484
agagcccttg ctggggggtg cctgggagat ggggtaagaa gagctttcat ttgtctggta 60
gatagatagc atgtaagggg gtggttgtcc caggaggcag ctgctgacag gtttgctaca 120
cacagccccg gactgtgttg cctgggtgct cattcagaga ggggctatca tctgggagcc 180
tgtgcccctg ggtc 194

<210> 485
<211> 67
<212> DNA
<213> Homo sapiens

<400> 485
tccatatcca ggtagttctc caggggctgt tcatctacca gggtgggagc ctcccactgg 60
gggaagt 67

<210> 486
<211> 70
<212> DNA
<213> Homo sapiens

<400> 486
taccgagtca accttcgcac acggcgagtg gacactgtgg accctcccta cccacgctcc 60
atcgctcagt 70

<210> 487
<211> 257
<212> DNA
<213> Homo sapien

<400> 487
actcccgatt gaagcccccca ttcgtataat aattacatca caagacgtct tgcactcatg 60
agctgtcccc acattaggct taaaaacaga tgcaattccc ggacgtctaa accaaaccac 120
tttcaccgct acacgaccgg gggtatacta cggtcaatgc tctgaaatct gtggagcaaa 180
ccacagtttc atgcccatcg tcctagaatt aattccccta aaaatctttg aaatagggcc 240
cgtatttacc ctatagt 257

<210> 488
<211> 378
<212> DNA
<213> Homo sapien

<400> 488
actctgctat ggtgctggct tcctttaaac tcaggataga tgccaggtgg gctccgtttc 60
cgtaagactg acactcgagc tcggcatcag accagttcct cagcttcctg aagtaaccat 120
agcaattgga cttgtggtaa aaccatccag gagcacagct gggtctcatg atgatatcac 180
ccaggactcc tgttttggcc aggcagctca gcaataggag cagccgcatg cttctggaag 240
ccatcttcct cctaccctga ggatgtagct agtgcaagga tctcagagac cttactagcg 300
cttctttgaa actcctgggt tctccttgat ctgcaaatct gtytggcaac caagactcta 360
agggcccctg ccttcttc 378

<210> 489
<211> 429
<212> DNA
<213> Homo sapien

<400> 489
ccgaggtaca cagaagtttg aatcacaaaa cataattacc acaataaaac acagtgttca 60
agtatcttgg cagagcaatc tgccgcacaa actgcaaatt aaattaacta cacagactaa 120
aaactataca gcctaccatc aacagttgtg cattataaaa aggtagtttc tttccttttg 180
ttttaagtca ggaacaggta gatttttaaa aatatatata caagctaaca cacacrgcta 240
tcagcactaa tgcccccccc tcaacttttc ctttttctta tagaaaatgg aaagcttaca 300
atacctcstc srtymwrgmr scagrcctwc gagccwgcct grasagggtk wgcmktggar 360
magmtstgkc ctgaggttta gagccgcttt gtgcggggat ggtggaggct agggtggggg 420
tgagaaaag 429

<210> 490
<211> 532
<212> DNA
<213> Homo sapien

<400> 490

ttggattgcc acacggctca cattgcatgc aagtttgctg agctgaagga aaagattgat 60
cgccgttctg gtaaaaagct ggaagatggc cctaaattct tgaagtctgg tgatgctgcc 120
attgttgata tggttcctgg caagcccatg tgtgttgaga gcttctcaga ctatccacct 180
ttgggtcgct ttgmgktgtg atatgagaca gacagytgcg gtgggtgtca tcaaagcagt 240
ggacaagaag gctgctggag ccggcaaggt caccaagtct gcccagaaag ctcagaaggc 300
taaatgaata ttatccctaa tacctgccac cccactctta atcagtggtg gaagaacggt 360
ctcagaactg tttgtttcaa ttggccattt aagtttagta gtaaaagact ggttaatgat 420
aacaatgcat cgtaaaacct tcagaaggaa aggagaatgt tttgtggacc actttggttt 480
tcttttttgc gtgtggcagt tttaagttat tagtttttaa aatcagtacc tc 532

<210> 491
<211> 567
<212> DNA
<213> Homo sapien

<400> 491
tcgaggtaca aaagcccttc aaaaggagtt cagcttttat aaacaccaaa acactctctg 60
cctgtaaaat gtttttgctg aaatttgtat cattaactct caaatttaca tcttcatgtt 120
tgagatacgc ttttaggact gtctatgcat gtagactttg gtcaactctc tcctcctccc 180
tcaataaatc agttaactta aaaaatatat tgtgaccatt tttataaaat acatgttcat 240
aaaacagatc aacatattta gcttatacag aaataaaatt aagtcaatcc actcacaaag 300
aatttctatt ttgtaaaaat gtagcttgta tttcagtata ataaaatctg atgcaaaaaa 360
cctgccccggg cggcaagtgt gctggaattc tgcakatatc catcacactg gcggscgctc 420
gagcatgcat ctagagggcc caattsgccc tatagcggcg cattaagcgc ggcgggkgtg 480
gtggwtacgc gcasygtgac cgmtacactt gccarcgccc tagmgcmcgc tcctttcgcw 540
ttcttccctt cctytctcgc cacgttc 567

<210> 492
<211> 422
<212> DNA
<213> Homo sapien

<400> 492
agtgtgctgg aattcgccct tggccgcccg ggcaggtaca agactcaata atcacctgac 60
tgagctccaa ttaactgagg agaaacgggg tggaggagag ggctggttgc tattcagact 120
tgataatgag attgatctgt cccatggaga gtgaaagttc agttccactt ctgcctcctt 180
ctttccatgc tgtcctcatg ctctttatcc tcacttcctc agtcccttca acactcaaaa 240
tctgatttta tttctctctc acacgtatca ggggcagttt ctgaagttgc tgaggttgaa 300
ttttcttcac aaacctctat aaaacatcag cagagaacat ataaatacat tttgattagc 360
atacattgca aaatttctcc cacaatgtca ggggatgaaa gcaggtggtc cccactgaga 420
gt 422

<210> 493
<211> 318
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(318)
<223> n = A,T,C or G

<400> 493
agtgtgctgg aattcgccct tagcggccgc cctggcaggt aagctttttt tttttttttt 60
ttttttttgat gattaacatc tttaattcaa atgkaaaagt tcaatacaag ccatttatag 120
ggcttgagat ttgttggtct tttaaaaaca araaatgggg aaatgcaaca aaatgacctt 180
tccacttttc aaaagctttc aagtaaagga tagatcatag ggccataaaa gatccattta 240
atsaaaccca cttttyaccc cctaccaatt gtcttacacc cantccacaa tcttaataca 300

tattcctgaa natttaca 318

<210> 494
<211> 360
<212> DNA
<213> Homo sapien

<400> 494
accttttact acaacaagta aacatgcata ataaagtagg attcatccaa tgtctgacct 60
ttctttgcat caaaagaaca tttccggcca ggcacggtgg ctcacgcctg taatcccagc 120
actttgggag gccgagccag gtggatcacg aggtcaggag atcgagacca gcctggctaa 180
catggtgaaa ccctgtctct actaaaaata caaaaatgag ccgggcatgg tggggggca 240
ccgtagtccc agctacttga gaggctgaga caggagaatg gcgtgaaccc gggggcgga 300
gcttgtagtg agccgagatc gcgccactgc actccagcct gggtgacaga gtgagactcc 360

<210> 495
<211> 329
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(329)
<223> n = A,T,C or G

<400> 495
gaggtctggg atggggcttc actgctgtga cttcctcctg ccaggggatt tggggctttc 60
ttgaaagaca gtccaagccc tggataatgc tttactttct gtgttgaagc actgttggtt 120
gtttggttag tgactgatgt aaaacggttt tcttgtgggg aggttacaga ggctgacttc 180
agagtggact tgtgtttttt ctttttaaag aggcaaggtt gggctggtgc tcacagctgt 240
aatcccagca ctttgaggtt ggctgggant tcaagaccag cctggccaac atgtcagaac 300
tactaaaaat aaagaaatca gccatgaaa 329

<210> 496
<211> 292
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(292)
<223> n = A,T,C or G

<400> 496
acctgggatg aggtgggtgg agctttgaat ctaccactat ccaggccaca cacctagaag 60
ctctggtttc attgtttcat tgatttcatt gttttgattg atgctgacct taggcagcag 120
agttttcaat gctctccagg tgtttctaaa gtgcagacaa gtttangacc gtgcttgagg 180
gtgaagggca ggactgtgat ggggaggggc aaatatgggg cccttggggt gcaggcaatg 240
gttttccttg acctgaatgg gggtctcaca ggtgttgcat atacatatac gt 292

<210> 497
<211> 549
<212> DNA
<213> Homo sapien

<400> 497
tcgaggtacc gaccatagag caagaatcaa gattctgcta actcctgcac agccccgtcc 60
tcttcctttc tgctagcctg gctaaatctg ctcattattt cagaggggaa gcctagcaaa 120

ctaagagtga taagggccct actacactgg ctttttttagg cttagagaca gaaactttag 180
cattggccca gtagtggctt ctagctctaa atgtttgccc cgccatccct ttccacagta 240
tgcttcttcc ctcctcccct gtctctggct gtctcgagca gtctagaaga gtgcatctcc 300
agcctatgaa acagctgggt ctttggccat aagaagtaaa gatttgaaga cagaaggaag 360
aaactcagga gtaagcttct agccccccttc agcttctaca cccttcggcc ctctctccat 420
tgcctgcacc ccaccccagc cactcaactc ctgcttgttt ttcctttggc catgggaagg 480
tttaccagta gaatccttgc taggttgatg tgggccatac attcctttaa taaaccattg 540
tgtacctgc 549

<210> 498
<211> 412
<212> DNA
<213> Homo sapien

<400> 498
cttgaagctg ggaggtggag gttgcagtga gccgagatca caccactgta ctccagcctg 60
ggcaagagaa tgaaactctg tctcaaaaac aaaaataaaa acaaaaaaaa aactcttgtc 120
attctggaaa tgtccacaat tcagtcttca cctgcctcca tcctcatgaa ggcaccaggg 180
gagcgcggtg ggctcacctg atttcttggt taggtctgtt ctgttccttt tttatgcggg 240
gtctgtcggt gggcactgct ccaatgtgag gggtccaggc tccatcgtag cctcttaacc 300
agctcagtgc caggaagggt ggactttgac aaaaacccac ctcaaatctg cactccccaa 360
cctggagtgc aacctgtggc aagctcccta ggctctctgg gcctcagctt cc 412

<210> 499
<211> 447
<212> DNA
<213> Homo sapien

<400> 499
acttttaaga atatactttg atttaatatg tatgttagta aaactccacg tgttgtaacc 60
attattatgt ttttgttttt aaaatgggga tgtaatacta ataaccacta cctataaaat 120
aaagcacaca attgttccgg cgatttttaca aatctttttt tccaggtgta aagtctacaa 180
aaattccaaa aaattagaga acactgaaaa catattaaag tttgacatcc aactttatag 240
tatttccatg ttaccctgaa agataactta aaaaatatgg ccttcttaga acaggccact 300
ctgctattat aaaaaattgg tgacagcaag aaattgtatc actgatatgt ggaattttttg 360
taaatagttt tctctccaaa tcattagaaa aatgttcaaa aataaaaaca aaataaaata 420
tggtggtggt ccctaaacta ttttgaa 447

<210> 500
<211> 527
<212> DNA
<213> Homo sapien

<400> 500
gtttgcttct tgcatctgat taactagaat atttctcttt ccccctttta atttgtgatg 60
tcacttgacc ccatttatgt gtaggagcac tacaccattg gtttccaata ctgcacacat 120
aagatacata cttgtgtgca gaaagtatct tcctccaggc ttgtaatacc cttcacatgg 180
aagattaatg agggaaatct ttatattctg tataaaaaca aaagcaaatt tatatactaa 240
aatcatttgt ctaaaaattt aagttgtttt caaataaaaa ttaaaatgca tttctgatat 300
gcactgattg tgttgcctcc agcttttttt gctctctatg agtgactact taagtcactt 360
gttgagaggg attatttact aattatatac ttctcattcc tgtaactcca ttccctttaa 420
acagtggtga tatcaaatat acttccatcc attgaatggg gtatttttaa caacaacaaa 480
agtgatatac taaaaaatgt attgcttaag gcttattgaa tcatttt 527

<210> 501
<211> 304
<212> DNA
<213> Homo sapien

<400> 501
gaggttgccg accaaagaga ccattgagca ggagaagcgg agtgaaattt cctaagatcc 60
tggaggattt cctacccccg tcctcttcga gaccccagtc gtgatgtgga ggaagagcca 120
cctgcaagat ggacacgagc cacaagctgc actgtgaacc tgggcactcc gcgccgatgc 180
caccggcctg tgggtctctg aagggacccc cccccaatcg gactgccaaa ttctccggtt 240
tgccccggga tattatagaa aattatttgt atgaataatg aaaataaaac acacctcgtg 300
gcaa 304

<210> 502
<211> 425
<212> DNA
<213> Homo sapien

<400> 502
actgattgtc atcctgactt tggcattggc agctcttata ttccgacgaa tatatctggc 60
aaacgaatac atatttgact ttgagttata atatggtttt gtgacttatg agctgtgact 120
caactgcttc attaaacatt ctgcattggg tataatctaa gaattgttta caaaaagatt 180
attttgtatt tacccttcat tccttttttt gatccttgta agtttagtat aaatatatct 240
agacattcag actgtgtcta gcagttacgt cctgcttaaa gggactagaa gtcaaagttc 300
cttgtctcac tatttgatct gctttgcagg gaaataactt gtttttctc atgtttcatc 360
ttctttttat gtaaatttgt aatactttcc tatattgccc tttgaaattt ttggataaaa 420
gatga 425

<210> 503
<211> 256
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(256)
<223> n = A,T,C or G

<400> 503
accagcagtg tgtcaggtgc tgcagagcgt tcttggagaa ggcccactga ggcaggttcg 60
tgccctgctg cggccagcct gactagaccc caccctgagg tcctgcattt ctcagtcggt 120
gtgtaatcac gttccagggc ccaaagccca gctctttgtt cagttgactt actgtttctt 180
accttaaaaa gtaattgtag atggaaatca gttgtgtttg gcangagaat caataaaaat 240
ctttgattca gacagc 256

<210> 504
<211> 255
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(255)
<223> n = A,T,C or G

<400> 504
actgttaatg atgttaatga ttttttttta aactcatata ttgggatttt caccaaaata 60
atgcttttga aaaaaagaaa aaaaaacgga tatattgaga atcaaagtag aagttttagg 120
aatgcaaaat aagtcatctt gcatacaggg agtggttaag taaggnttca tcacccattt 180
agcactgctt ttctgaagac ttcagttttg ytaaggagat ttaggttkta ctgctttgac 240
tggtgggcct ctasa 255

<210> 505
<211> 485
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(485)
<223> n = A,T,C or G

<400> 505
agcttggtcc gagctckgat cccctagwaa cgccgccagt gtgctggaga attccccctt 60
agcgtggtcn ttgcccgagg tacagaaaac ccaaaggcaa ccacatagca tatgtaaaat 120
gtgcaaatca ctttaaaatg caagttattc tatagcattt gcaagataga atttcactgn 180
aattagggaa tctagttcat cctaacttaa tagtcttttg catgtataga caatgcaatt 240
ctacaaggca caactcagcg ttgatgctaa agtatgaaac acatcctcag attatttatt 300
tgaaaatatt aaaatagcat cgtttattat tttttaatga gtcatgagct catttctaaa 360
gcttcataaa gcattacact gataacatat gtgtggtcag gacaaactgt tccctgaact 420
taagaggtga aggacaagac cccatattat tatcctgtat taaaaaagga aatatacata 480
tatgt 485

<210> 506
<211> 230
<212> DNA
<213> Homo sapien

<400> 506
acaactccaa aaggagacat tggagaagaa ccaagctggg tctataagga attgcacatg 60
agatggcaca catatttatg ctgtctgaag gtcacgatca tgttaccata tcaagctgaa 120
aatgtcacca ctatctggag atttcgacgt gttttcctct ctgaatctgt tatgaacacg 180
ttggttggct ggattcagta ataaatatgt aaggcctttc tttttaaaaa 230

<210> 507
<211> 179
<212> DNA
<213> Homo sapien

<400> 507
acctacttct ccacaccgct gttgcttggg aaaaagggca tcgagaagaa cctgggcatc 60
ggcaaactct cctcttttga ggagaagatg atctcggatg ccatccccga gctgaaggcc 120
tccatcaaga agggggamta tccsgtgaac accctgaaaa gakccgctgt gacgggtgg 179

<210> 508
<211> 321
<212> DNA
<213> Homo sapien

<400> 508
acagagtttt atataaattt aaaccaattt ttaaaacaaa actgcggaca ccaccataaa 60
aatggaatca aaagaaagtt aatttatgaa attaagaggt cagcagaata tactcagtga 120
tggaagacac ttgggaaagt ctttttaata gaacaagaac gatcttaatt taagaatatt 180
atcctggttt aacaacagtg ccctgtttac aacagattgt gccctatctc atctgcagcc 240
gaggaataaa ggattctgat tagaaagagg gttgcctaca gattagtaag caattccttg 300
gatcttatgc acagaacttg t 321

<210> 509
<211> 176
<212> DNA

<213> Homo sapien

<400> 509
acgtgggata cgggtcatgg gcagagctcc tggcctcagt gatgcctcct gatctatcca 60
taggcctgga agatcagcac tgggatgacg atgagcagaa tggtcatgag gatgcccasa 120
atcagggccc acatgttcag gcacttggcc ggtggatgca targcctggg cccctg 176

<210> 510
<211> 298
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(298)
<223> n = A,T,C or G

<400> 510
accaacttta tatcatatgt ttatacaatt taatttaaaa attcatttta aggaagacag 60
ataatttgaa agacttttgt ttttcttgac ttaattcatg aagtatcatt ttttgactga 120
gtctccattt acttcattct taatgattat tgtcatccct ttaaatctgt gccttttttct 180
tcttgagcga agctgtttga gtaaacctgt tgaagagtgt ttgtgtcttt tgtgcttttt 240
tgttgntatt aaaacaccaa ctaaacctta tagtcaagac aaggctctat gtttctgt 298

<210> 511
<211> 345
<212> DNA
<213> Homo sapien

<400> 511
acagattttt gtatagctga taagattctc tgtagagaaa atacttttaa aaaatgcagg 60
ttgtagcttt ttgatgggct actcatacag ttagatttta cagcttctga tgttgaatgt 120
tcctaaatat ttaatggttt ttttaatttc ttgtgtatgg tagcacagca aacttgtagg 180
aattagtatc aatagtaaat tttgggtttt ttaggatgtt gcatttcgtt tttttaaaaa 240
aaattttgta ataaaattat gtatattatt tctattgtct ttgtcttaat atgctaagtt 300
aattttcact ttaaaaaagc catttgaaga cctaaaaaaa aaaaa 345

<210> 512
<211> 459
<212> DNA
<213> Homo sapien

<400> 512
acttatttca acaattctta gagatgctag ctagtgttga agctaaaaat agctttattt 60
atgctgaatt gtgatttttt tatgccaaaa tttttttagt tctaatcatt gatgatagct 120
tggaaataaa taattatgcc atggcatttg acagttcatt attcctataa gaattaaatt 180
gagtttagag agaatggtgg tgttgagctg attattaaca gttactgaaa tcaaatattt 240
atttgttaca ttattccatt tgtattttag gtttcctttt acattctttt tatatgcatt 300
ctgacattac atattttttta agactatgga aataatttaa agatttaagc tctggtggat 360
gattatctgc taagtaagtc tgaaaatgta atattttgat aatactgtaa tatacctgtc 420
acacaaatgc ttttctaatg ttttaacctt gagtattgc 459

<210> 513
<211> 422
<212> DNA
<213> Homo sapien

<400> 513

gccccgtagt gatgagcact gactggttca ctggccacat tttagttctt cataataata 60
ggccacaaaa gggctctgtg gtttgcctcc atgtgcactg gcccctcccc acccctaggg 120
ggcactcagt agctgctgag aaggcctgtc cacgaggctg ttggaacccc tccaataaat 180
acttagaggt agtgtatctg atgcttgttt tcgtggagaa aattgtattg gagaacttaa 240
aacatcacga atatttttaa taggatccgc agacacccaa aggagaagct tggtcttttc 300
caggtatttc caacttgagt tcagcccaaa gcctttgaaa ggaatgcatt accacatgac 360
cacatgctga gaccccatgg ggtctaacac gggacctaag aaagtctctg cagccagata 420
gt 422

<210> 514
<211> 326
<212> DNA
<213> Homo sapien

<400> 514
accagtatag taatatctgt atactaacta gggctttgta ttgtcaataa tttttttaata 60
attttttaat gaggtattta ccactgaaga aatatgataa tataaaacca tcaaatttta 120
taattgagat gatactctgg aaaaacatgt catttcattt tcagaaaact cttaagctct 180
cttcagtctc tgtaatgttt ctgattgcat gtttcttcat gaaaagtatg ttgttgtttt 240
gatagtaata ataataaatg taggctcagt tctttcccag gattttcatc aaaaagcttt 300
aagtgcctaa ccctgcttgt ctctgt 326

<210> 515
<211> 323
<212> DNA
<213> Homo sapien

<400> 515
accagatgta gctaggaaaa cccaaacgtt ccttggatcc tgagacagct ggtaagcacc 60
caggccggct agactgccaa agagcagccc tgcagccagg gacggcacgc tgcctgcttt 120
tacatagcca atgatcccac cagaagcaac cagtgctgcg tagccaaagc caaaccaatg 180
caagggcact actgagccag tgtcctgcat ttttctcttc tctgtccaga caggagacta 240
ccccaggcct gcaccggtct cacgaaggcc ccggctgtct acaagggcgc gcaagccgca 300
ggaatgactg cgaggtgtcg ccg 323

<210> 516
<211> 403
<212> DNA
<213> Homo sapien

<400> 516
accccgttgg ggttcatttc ctgcccaaga agctggatga ggcagtggct gaagcccacc 60
tgggcaagct gaatgtgaag ttgaccaagc taactgagaa gcaagcccag tacttctaaa 120
tactgagtga atacatcaca gattgcataa agtgcatgat tgcaagttgt tgtcatccat 180
tcagctttct ctgtctgttg ttctggcaat ttcatattgt caaagattct gaaaacaatt 240
ctaaataaat cctgccacca gtgtttctca taagtgtggc catatgtttt cattatttca 300
aacattactg ttaaacccct ggttcttaca tctaatttgc atctattgat gatacaggat 360
aactcaaaga gaattgggaa ccatcctctc acccacaccc tgt 403

<210> 517
<211> 360
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(360)
<223> n = A,T,C or G

<400> 517
acctgaacga agtcgcgggc aagcatggcg tgggccgtat tgacatcgtg gagaaccgct 60
tcattggaat gaagtcccga ggtatctacg agaccccagc aggcaccatc ctttaccatg 120
ctcatttaga catcgaggcc ttcaccatgg accgggaagt gcacaaaatc maacaaggcc 180
tgggcttgaa atttgctgag ctggtgtata ccggcttctg gcacagccct gagtgtgaat 240
ttgtccgcca ctacatcgcc aagtcccagg agcgagtgga agggaaagtg catgtgtccg 300
tcctcagggg ccaggtgtac ctgmccgggc ggccnctaac ggcgaattmt gcagatatcc 360

<210> 518
<211> 255
<212> DNA
<213> Homo sapien

<400> 518
cataaatatt atactagcat ttaccatctc acttctagga atactagtat atcgctcaca 60
cctcatatcc tccctactat gcctagaagg aataatacta tcgctgttca ttatagctac 120
tctcataacc ctcaacaccc actccctctt agccaatatt gtgcctattg ccatactagt 180
ctttgccgcc tgcgaagcag cggtgggcct agccctacta gtctcaatct ccaacacata 240
tggcctagac tacgt 255

<210> 519
<211> 449
<212> DNA
<213> Homo sapien

<400> 519
accttcctct caattttgct gtgaacctga aatggcttta aattaatact cttatttttt 60
atttaattta attacataaa ttaaacctta ccatgaccaa attgtgttag gacggcctgc 120
tatctacagc acagtgtgtc atttgcagat ttgtggttac ctataccacg ctaggtgttt 180
tgacatgttt agtatttctg ctttacagtg ctgaattcca tattttagaa gctatgaaag 240
tccttttatg aaaaagttac tgattgcttc tcagttatta ggaaaacagt tgtttcacaa 300
ttattatgta gatatgatgc ccaaatatca tttttagtat atcttgtcga tctttaagtt 360
gttactattg tgttattcat gtctttaaat cagataccaa atattttta ggaaagaaaa 420
atgttattac tgtcattagg ttggctttt 449

<210> 520
<211> 92
<212> DNA
<213> Homo sapien

<400> 520
acccccatca cagcagtcaa acagcctgag aaagtggcag ctaccaggca ggagatcttc 60
caggagcagt yggcaryagg gccagagatc cg 92

<210> 521
<211> 123
<212> DNA
<213> Homo sapien

<400> 521
acagagggga caacaatgaa tcagaacaga tgctgagcca taggtctaaa taggatcctg 60
gaggctgcct gctgtgctgg gaggtatagg ggtcctgggg gcaggccagg gcagttgaca 120
ggt 123

<210> 522
<211> 303
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(303)
<223> n = A,T,C or G

<400> 522
acaaaaaaat gaatgttaca aaaatcacgt aaaaaaaact aggctcaagg aagcagccgc 60
ccttgcaaga gggctcaagg cacctgagag gctgagaaga ggccaacctg gccatgggcg 120
tggctgcatg gacagctctt ccctcctgcc cttccccaga tgcccttccc tcctgccccg 180
aggggcacac tccctctccc caattacagg tgctacaaaa ctgccttgaa taccaccgcc 240
aaggcactgc cagagatgaa atgggccctg agcagangcc tcangctctc cctccccgt 300
agc 303

<210> 523
<211> 424
<212> DNA
<213> Homo sapien

<400> 523
acagtgcatg gtgctgtcac ttggaaagcc tttcaatgtt gtcttcagat tgttgtgatg 60
aatatgaaac atgcagaccc tcctttataa agaaaaagac cttaaaactt gaatatgaga 120
taattttaca ttttaaaagt ttatttgatt ttcatattat tcactttcaa agccctttca 180
aatagaaaag gtatgaactt ttggggggat aatttatgta tcgtaaactt attagaacaa 240
aatattcctg atgtataatg agttgtttta tttatacaac tttttcaatg gtagtttgca 300
ctattcttta ttatgctaca ggtttattta ttatgaaaca aaggaatatg tattttatgt 360
attttaccat gcataggtta actctttgcc acagatttat tggtcttgat acacctaaaa 420
taaa 424

<210> 524
<211> 172
<212> DNA
<213> Homo sapien

<400> 524
acaatttcat tgcagacaca aagacttaag agtttcaaag aattttttaa aataaaaaaa 60
aaatttgcac ttattcctca caaaatcttc acttttggaa ctatcccaat tgaagctaca 120
cactgaattt attaatacag cattaagttt ctttgtgtaa aaaaatcttt gt 172

<210> 525
<211> 256
<212> DNA
<213> Homo sapien

<400> 525
actccttccc agttttttct ttatactgag ccttcaggga cagtaagcat tctacagctt 60
catttatttt agccttaggg gatttttcag cttttagctt acgaaccacc tccccttgtg 120
cagcaacttc atcatacaga gatttacttt ccagaatact tgctgaggaa ttagaagaaa 180
tattctgtcc tatttcagca ggagggtttc caggtttata ttcctggcca gttttctcct 240
tatattcaag ctttca 256

<210> 526
<211> 479
<212> DNA
<213> Homo sapien

<400> 526

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actggagatg tatttgataa ccaaggtttt aggtaaattt tcaccagtat tagttctatt      60
tgcaaactga aaaatgttgt aggcttaata taaaataacc acattagtga acattatatc     120
tcttagaaga aaggccatat tttgctcctg cttctgtaaa aatattattt gtttgaaggg     180
gaaataatgg tagtgtgacc tttcacttaa ttcctactcc cttaatgtga gagagacaaa     240
atgagctgaa gaaggaaaat tctggagtta cactccacaa ccttgaacat actgacggac     300
atctctgttt tgacaacgat ttctccatgc cacccatgct ctaatgcctt gtggatcacg     360
gacaaccctc tttgcacaag ctacagcatc agcgatgtta tcttgcagca aagcactgca     420
ggataaatga caggcattaa ctgctcctgg ggttttgcca tcattacacc agtagcggc      479

<210> 527
<211> 220
<212> DNA
<213> Homo sapien

<400> 527
accaaattga agggtttaga ggccctcaaa tgggcatcac tcataaaggc aattttcatg      60
gtttaatata gaaattactc taatgtgaga acacaacatg ggaactattc aaaatacacc     120
tttctatgca aaattgagtt tgyatctatt ttagcatttt aaatgagcac tctgcaactg     180
agaccaaata tcaatcatct cttgaggttt tctactatgt                           220

<210> 528
<211> 373
<212> DNA
<213> Homo sapien

<400> 528
acamcatcga tgaaattcag acatacaatg taaagttgaa ataatcccaa attattttac      60
attatttatg tatactttac aaataacaca aatatggaaa tgttttcttg gaaagctgtt     120
ggaactgtaa gcactgcaac gtatgaaaga aacatattta gcaataaaaa atttaataat     180
atcctacaac tgaattagtt gcatatttat accattcaaa atcttgattt taacctcatt     240
cactcctttg aaaaatacat tcctcttttg ttcttttaaa tgcaaaatta gtggcagttg     300
cagcaaaaac gccgaaattc tataagaaaa aaactgattt accccaaaca tatcattcag     360
cacaaactgc ggt                                                        373

<210> 529
<211> 344
<212> DNA
<213> Homo sapien

<400> 529
acatttctaa gtcaaacact tgtgactttt gctttaattc catgaatgtt cctgcctcct      60
tgatatttgt atttattctt tttttctcta gagtagaggt ataattgtgt gatatttcag     120
aaatacagat aaatgattca aaaagtcaca gttaaggaga atcatgtttc tttgatcatg     180
aataactgat tagtaagtct tgcctatatt ttcctgatag catatgacaa atgtttctaa     240
ggtaacaaga tgagaacaga taaagattgt gtggtgtttt ggatttggag agaaatattt     300
taatttttaa atgcagttac aaattataat gtattcatat ttgt                      344

<210> 530
<211> 354
<212> DNA
<213> Homo sapien

<400> 530
accattgctc tttcctagct aaccctagat atggcagctc tttaatgtac ctgagatcct      60
ggtgcacaac atagtgatct tcatgcgaac ttcagtgaag atttcataca ttggcctcat     120
gacccagagc tccttggaga cacatcacta tgtggattgt ggaggaaatt ccacagctat     180
ttaacaactg ctattggttc ttccacacag cgcctgtaga agagagcaca gcatatgttc     240
ccaaggcctg agttctggac ctacccccac gtggtgtaag cagaggagga attggttcac     300
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ttaactccca gcaaacatcc tcctgccact taggaggaaa cacctcccta tggt 354

<210> 531
<211> 418
<212> DNA
<213> Homo sapien

<400> 531
acacatccca tcttcaaatt taaaatcata ttgtcagttg tccaaagcag cttgaattta 60
aagtttgtgc tataaaattg tgcaaatatg ttaaggattg agacccacca atgcactact 120
gtaatatttc gcttcctaaa tttcttccac ctacagataa tagacaacaa gtctgagaaa 180
ctaaggctaa ccaaacttag atataaatcc taccaataaa atttttcagt tttaagtttt 240
acagtttgat ttaaaaacaa aacagaaaca aatttcaaaa taaatcacat cttctcttaa 300
aacttggcaa acccttccct aactgtccaa gtatgagcat acactgccac tggctttaga 360
tactccaatt aaatgcacta ctctttcact ggtctgaatg aagtatggtg aaacaagt 418

<210> 532
<211> 583
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(583)
<223> n = A,T,C or G

<400> 532
cgtcccaaca attatattac taccactgac atgaccttcc aaaaaacaca taatttgaat 60
caacacaacc acccacagcc taattattag catcatccct ctactatttt ttaaccaaat 120
caacaacaac ctatttagct gttccccaac cttttcctcc gaccccctaa caaccccccct 180
cctaatacta actacctgac tcctacccct cacaatcatg gcaagccaac gccacttatc 240
cagtgaacca ctatcacgaa aaaaactcta cctctctata ctaatctccc tacaaatctc 300
cttaattata acattcacag ccacagaact aatcatattt tatatcttct tcgaaaccac 360
acttatcccc accttggcta tcatcacccg atgaggcaac cagccagaac gcctgaacgc 420
aggcacatac ttcctattct acaccctagt aggctccctt cccctaccca tcgcgactga 480
tttcactcac aacaccnnta ggctcactaa acattctact actcactctc actgcccaag 540
aactatcaaa cttcctggcc aacaacttat atgactagct tac 583

<210> 533
<211> 529
<212> DNA
<213> Homo sapien

<400> 533
gaggtactta ataaccaagt ctcggaacac tgagccatca cctgcaatgt ttcctagagc 60
ccagacagct tgttcactga tgtgagcatg ggagatgcc aacagagaaa tgaatgctgg 120
gatggcacct ccatctacca cagccttggt ttgttctgat gtcccagaag caatgttagt 180
gagtgcccaa gcagattcaa actgaatggg actacaatca gttctgccca agaaggacac 240
aaatttcgga atcaaaccag cccggattat gttgtctatg gggggctgtt tttctctgga 300
aagtagtttc ctggcagctt gagtagcttg gagctgattt tccacattgc tgctatttat 360
gcctttgaca atgtcatcaa cagaccaatt tacagtgccc tggttgttgc ggttttcctg 420
cagcggagaa gtagcatcat caggaaatga gcttacattt ctcctcttca gcatctggtc 480
atccttctta gctttcctca gctccacatt gacctctatt ctgcgacgc 529

<210> 534
<211> 297
<212> DNA
<213> Homo sapien

<400> 534
actcattaat attattttgt tttgagaaag ccagaaatga ttctaagaaa taaacaataa 60
taataaaaga tgtaattaat atactgtatc cctttttaagc caaagcacac tttttacctc 120
aagactgttc tgacttttac attcttaatt tcctttgtcc aaaataggac cccatttttaa 180
atagagttca tttgaattga gttcataatc taaagtcact tttccccaca agatgttttc 240
atttcagtat ataaactgct aagcggcaaa tgactaagtc agttataaag aatttgt 297

<210> 535
<211> 373
<212> DNA
<213> Homo sapien

<400> 535
actttccagg gcacagcctg gacgaatgat gccaaacttt ccgggcacag acaaatcaac 60
cacagttgag ccaaggcgac actcggggct ctggccatcc ccaatttgtc ccccatcaat 120
aaccaaggac aactgaggcc agagatcctg gaactcctcg acattcagag aactggcctg 180
ggagctgagg ttggcactag tgagagcaag cggaccctca aacatctgag ccaagtcttg 240
cataaaagca tgatcaggaa tccgaatgcc tacaagaggc gtaaaagggt ttaggtcctt 300
gttgagctcc tccgagcgtt ccatcaccag ggtcactggt cctggcagta ggtctttcag 360
gagcccctca ggt 373

<210> 536
<211> 254
<212> DNA
<213> Homo sapien

<400> 536
acatgctcca ttaaattaaa tgtcatccaa catttatcaa atattgtctt agttacagct 60
tgatacctat ctaaattcat attcgagcaa aactaggccc cgaaagtgcg tttgtggctc 120
tgcacctcca gaagtgagtt caaaaaacct gcagctcatc agaactgcaa caataactct 180
taatattttc ttgtgacaaa aaaaaaaatc aagtttactt caatatattt tcaaatattt 240
actggaagta atgt 254

<210> 537
<211> 449
<212> DNA
<213> Homo sapien

<400> 537
acagacttgt ttttgagtgt tgagtagcag ggacaaaata agggaatgtt atttttttaag 60
aaaattcatt ttcattgttg tctccttcct ttctgtgaa agtcctcata ctgagaaatt 120
tgtatatttt atattaaatc acttactatt gatttttgtt gtgattttca aaggtggatt 180
cccacagata aaatcttggc tattgcccaa aacatagtaa agggtcacgt gtgacttttt 240
ataataggaa gaaaattctg cctttgtgag tgcacatgtc cacatttcat ccctccttcc 300
ctcaaaaccc tagagagggg cattaaagaa ttgttgatgt atatgcaatg tctgttaagc 360
atgcactatg tatttcatcc tcatttattg ggtctgggac tgaagttttt agccagcatg 420
gacctaacct actttttggg ataaaattc 449

<210> 538
<211> 328
<212> DNA
<213> Homo sapien

<400> 538
actcagcgcc agcatcgccc cacttgattt tggagggatc tcgctcctgg aagatggtga 60
tgggatttcc attgatgaca agcttcccgt tctcagcctt gacggtgcca tggaatttgc 120
catgggtgga atcatattgg aacatgtaaa ccatgtagtt gaggtcaatg aaggggtcat 180

tgatggcaac aatatccact ttaccagagt taaaagcagc cctggtgacc aggcgcccaa 240
tacgaccaaa tccgttgact ccgaccttca ccttccccat ggtgtctgag cgatgtggct 300
cggctggcga cgcaaaagaa gatgcggc 328

<210> 539
<211> 506
<212> DNA
<213> Homo sapien

<400> 539
tcgaggtact ttggcctctc tgggatagaa gttattcagc aggcacacaa cagaggcagt 60
tccagatttc aactgctcat cagatggcgg gaagatgaag acagatggtg cagccacagt 120
tcttttgatg tccaccttgg tcccctggcc gaacgtccag cggagagact gttggcagta 180
ataaatggca aaatcatcag gctgcaggct gctgatggtg agagtgaatt ctgtcccaga 240
tccactgccg ctgaaccttg atgggacccc actatgtaaa gtagacgcct tatagatcag 300
gagattaggg gctttccctg gcttctgctg ataccaggcc aaccaattat taatattctg 360
actggcccgg caagtgatgg tgactctgtc tcctacagat gcagacaggg tggaaggaga 420
ttgggtcatc tggatgtcac atttggcacc tgggagccag agcaagcagg agccccagga 480
gctgagcggg gaccctcatg tccatg 506

<210> 540
<211> 519
<212> DNA
<213> Homo sapien

<400> 540
tcgaggtacc tttccttgtt tcctagaatt cctaaggagg aacaacaaca aaatcggggt 60
ttgttcagca attgcaccac atctctaaaa attaaaacat tattcagtaa gtgaaggttt 120
ctgataaaca agtggatcaa actgaatatt tccaattaag aaagttcaca ataatacagt 180
agtgtattat taccaatagg aaggcctaat agtcgactat tattttttaa ggcaagaaaa 240
aagaaaacaa gtgcaagcta tgccaagctt tggtgaatgc tgtccttggc attgcaagta 300
taaagtttgt ttaaaaagaa aagggaaaaa ttaaactaat gcttcaacaa ccacagaata 360
aggtttagga ctgcaaagaa agaggaaaaa aagaaacatt attcctctcc aattatactg 420
ccaagcattc acaagtgagc tagggatcat aaggttaatt atacatttaa taaggtgtca 480
gggagataac tgctcatttc tttataaaaa ttaaaatgt 519

<210> 541
<211> 431
<212> DNA
<213> Homo sapien

<400> 541
acttgaggct tttttgtttt aattgagaaa agactttgca attttttttt aggatgagcc 60
tctcctagac ttgacctaga atattacata ttcctccagt aagtaatact gaagagcaaa 120
agagaggcag gattggggtc acagccgctt cttcagcatg gaccaagtgg gccttgggga 180
ttgcagcgtt ctcgaagtgg ctgtaggact cgaatttaca gaaagccaca gaggtgcaac 240
ttgaggctct gctagcaagc caccagtgag gctattgggt aaccaccttt ctatacagga 300
gattggaatc tactttgtca tttatccacc acagtgacaa aggaaaagtg gtgccgttat 360
gcaatccatt taactcataa acatattact ctgagtaact ggccagccat tcatcggatc 420
cttcattggg t 431

<210> 542
<211> 502
<212> DNA
<213> Homo sapien

<400> 542
acaaaaaagg aaataagaaa gtagtgacag cctatccata caaaaatcaa aaagacacaa 60

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aggaagatag aatgagaaac agacctacaa gaatcattaa acaataaaat aacagtaatc     120
tttgtcttca gaaaataaat attttaaaaa tagacttgcc aatcaataca catacattga     180
atagagggat tatataaaat tttatatacc aagatccaac ttgcctctct tcaagagtca     240
cttgagatct agtagtgaaa tcagcctgaa agtggcaagt ggaagaagac atttaggca      300
aacatcaacc aaacgagagc agaagagatc aaaattgtat tatacaaaat acatcgtaag     360
tcaacaactc tcttatttta taaaatatac tttatgtcaa aattcacaag agaaaaaagg     420
tcattaaaca ataataaaga tatcatttat tgaaaatgta tgacaaatat gtgcatacat     480
atatttatat gtttgtgtct gt                                              502

      &lt;210&gt; 543
      &lt;211&gt; 452
      &lt;212&gt; DNA
      &lt;213&gt; Homo sapien

      &lt;220&gt;
      &lt;221&gt; misc_feature
      &lt;222&gt; (1)...(452)
      &lt;223&gt; n = A,T,C or G

      &lt;400&gt; 543
actacaaggg cagtaaaaca atgatacact ggaaaaaaaa aaatgcagca ataaacattt      60
gttaaaaaga ctgatagaat aaataaaact acaaaaaaaa aaaaatcata caaacccatt     120
ctgaaacccc aagaagtcct ggaatacaga aatgccctcc tccttcacta tttcacagga     180
agcactgcag gctatttgct taatattgtc ctgggattac attctaaaat tagtaactgg     240
ttacagctcg gttgtagtgc acaattaaaa tcacactaac ttcatctgaa gtgtcattct     300
acagttttat ttacacaacc agtgaagggc atgttctaga ataccagctt taatcctttt     360
caaacattaa tataagaagc caaattgtaa tgatacagca aantgaggcc actggtatta     420
atacaggtag caaaggtcca catccaggtg gt                                   452

      &lt;210&gt; 544
      &lt;211&gt; 472
      &lt;212&gt; DNA
      &lt;213&gt; Homo sapien

      &lt;400&gt; 544
caatcattta taatagaaac accttgacca caagcccttg attgaacatt ttataatatt      60
tcatctactt attaaaacaa ataatttccc ttgggttgga ggggaggtga tttcataaat     120
taattagaaa gccatcttta gcatattgct tatgtctgga tccatgtttc tgaggaaaaa     180
gacattctca ggtgatgtat ttttttcatg cattagtatg catttttaaa aaataatgca     240
tgtttcttta ataattaatt ttcatcttct ataagatgcc atgtgaagaa gttgtggaaa     300
tgtagaataa aaagctaaag ctgccaaatt tctgttgaac tcttaaaaac agctcatgtt     360
tgtttgtcct ctcgggttgt ggcctagcct atttgcaatg taatgaagct gcagggttct     420
tgtatagcta aagcgttcaa tgcatttcac gtgctgtggt ggatgtgggt gc             472

      &lt;210&gt; 545
      &lt;211&gt; 281
      &lt;212&gt; DNA
      &lt;213&gt; Homo sapien

      &lt;220&gt;
      &lt;221&gt; misc_feature
      &lt;222&gt; (1)...(281)
      &lt;223&gt; n = A,T,C or G

      &lt;400&gt; 545
acttaagcat ttccactttt ggaagaaaag tgtattagta ttttatattg catttcattt      60
aaaaggacag tttttttttt ttttgtaaat ccattcattg aaatggtttc taaactgtat     120
aatgtaattt ggagcctatt tagtaatatg aattaaatgt cctatgtagt gctacaattn     180
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tygaattaga aagtgatcaa atgtmasaaa aaaattyaaa aattcagccc agaaaacaaa 240
atagggtatt aaattagttt aatgtaaaag gaattwataa g 281

<210> 546
<211> 423
<212> DNA
<213> Homo sapien

<400> 546
tcgaggtact gagacagaag attgtgtcta cataagcaca agttgtaaca tttcacaact 60
tctaaaagga atgtcaacaa ttacaacgat catgcatacc atggtcgata atcacatttt 120
agaagcattt tcaaccattt ctaaagaaat gcttataaca ttgttatata tagaactact 180
ttcaataaac tgcaaaacat tgatcgactt ttccagtatg agctacagtg tcaacacaaa 240
agggaggcat aaatgtttaa tttatgaaat cagaatggaa tatttactgt aaagaaaaat 300
taaaaagctt tcaaataaag gccattatcg aaccaacgtg aagagcacaa ctcgaacttt 360
tgagttcatt catcttttaa agctgtcctc tcaataactt cagttctaag cactgaattc 420
agt 423

<210> 547
<211> 399
<212> DNA
<213> Homo sapien

<400> 547
gaggtctttt agcaggtctc aaaagttttc ttctaatara ywtcttggtg ttctatcatt 60
cgtaggtgtt gaatttacca aactttttct atttcaatta ttacattttt actttgttca 120
agtaatattg tatcatatta aatgaacatt gcattgtgaa aataccctgc ttagtcatgg 180
tatgtaatca tccttatacc tttttgtatt ctttttttaa atatttctga gaatttctgt 240
gtctaaattt aaataggatg ttgttttgta atcatcttgt gattcttttg tctcctttgg 300
gtattattgg ccaatagatg aattaagaaa tgttacctct tctactgctt gaagtttttg 360
tgagaaattg atgtttttca ttaagtgttg atgaaatgt 399

<210> 548
<211> 246
<212> DNA
<213> Homo sapien

<400> 548
aaatgcatta taaatgtttt taattgtgtt ctgtttttttg cagtctttaa gtgccatgcc 60
aattgttctt atattctata gaagttcgct caaaatactc aacaggggaa taggcagcgg 120
acagtcagaa tggttggaat tttggctttc taagaaaaac tttattttgc ataagcatgt 180
ggtcagatca ttttgtgcat atgcagcctg gattggatgt taagtaaatg cttgttcagt 240
gccggt 246

<210> 549
<211> 413
<212> DNA
<213> Homo sapien

<400> 549
acaaactggt attttatact gttccaatgc cagtaatcaa tttattttct tcattaaaat 60
aatatacaca gaatgtattg ttagttcgat tccttcaaat tttatacata tttactttct 120
gttaaagaga aaaggataaa atggtataaa aaaagataaa gctattaatt aagcacgaga 180
gagaagataa atggatattt tccctgtgtg aggctaagac agaagcaaat ctcgttaaga 240
aaaatgccac ccacacaaca ggaaatttat ccaaaacaaa acaaaagcag ttatagaacc 300
ccttctctac catcagaagt aatttcacag caataaactt attggttaca acagacatac 360
ttgaacagtt aaggatggga agaaaggctt aagatatcac caaattaaac cgt 413

<210> 550
<211> 215
<212> DNA
<213> Homo sapien

<400> 550
acataaggtt caaagtttcc tttccttttt ttatttattt tatattttgc aatgtttttt 60
ttccataata tttaagtttt tcgatgttta gatatttttc ttcggtgaag cacaagtwtc 120
ttttcatggy ccctgakcaa ttttaaacag ttggaacacc ggtggcactg ataactgcty 180
tctgggcagc ctctttagct tggggggctb gtagg 215

<210> 551
<211> 175
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(175)
<223> n = A,T,C or G

<400> 551
ggcggaggag cggtaactac cccggctgcg cacagctcgg cgctccttcc cgctccctca 60
cacaccggcc tcagcccgca ccggcagtas aagatggtga aagaaacaac ttactacgat 120
gttttggggg tyaaacccaa tgctactcat gaanaattga aaaaygctta tmmga 175

<210> 552
<211> 298
<212> DNA
<213> Homo sapien

<400> 552
acagtgtata ctatccccac caaaggaaaa aaacattaag agcaaaacaa ggggtggggg 60
gtgggaatat tgctaaagaa aattctaata agagttatct ataattatag cttttattta 120
ttatatcttc attcaatcat ttattcacaa ttagtctaat tgcattcttg atgaataact 180
gacttcagca aaggagtcaa tccactaagc aaagttcatt tatttttcat gatgttcttc 240
tttcgatctt gagtctttac tctcctggat tcccaagaga actgcattag cctctagt 298

<210> 553
<211> 437
<212> DNA
<213> Homo sapien

<400> 553
yacaatggct taagcaaatc gctttagttt tttttctatt taagatttag gacagactac 60
tcgtctaaaa ttcactattt acagagaagg tcctagggaa caggataact tatttaggtt 120
tagctctcat aatacaatat ccataatggc tttagaagaa tgtaaataaa taacattggt 180
aaacagcgta tactgatatt ttctgacaaa ctcatttatc taacatcatg ctgagcaatc 240
aagaggattc ctctatatat tttaaatttt aatttattct atttcctgat tcacaaactc 300
ttgctccatg ttaaagcagt tatcaccaat agaacctatg agaaccagtg cccatggaaa 360
cctaacagct tgttttttta atcccctatt aaaactcggt tgaacttgat atatgcatgg 420
ttgaaatatg cgtgggt 437

<210> 554
<211> 575
<212> DNA
<213> Homo sapien

<400> 554
ycgaggtact tttgacaaca tttatctgca tgtccagatc agcaatgagt cggcaattga 60
cttctacagg aagtttggct ttgagattat tgagacaaag aagaactact ataagaggat 120
agagcccgca gatgctcatg tgctgcagaa aaacctcaaa gttccttctg gtcagaatgc 180
agatgtgcaa aagacagaca actgaacaaa ttacaaatga actttcttgc acttgcttgt 240
cgccaaataa aagagaggcc cattgattcc tcccccaccc caacactttt cttttaaagc 300
ttttctccct ccttgttctt gtttttcttt cttcctttcc ttttctctga gagttttaat 360
actttcaagg actttaaaaa aataatcatg tttgaattgt tttctcttat ttttgtgagg 420
tggtttgaag gaaggacaag gtagatctgt ttagttttgc agttgaagtt agatggtcct 480
aaacatttaa ttgtcaaata atttcaaatt taatgtcctg ctttcacatt gaagggcaga 540
gcctacaaaa cattgtatat ttcaaaagac aaaaa 575

<210> 555
<211> 226
<212> DNA
<213> Homo sapien

<400> 555
accgaaccat gaccacccct ggcaagagcc ttcatgcacc tagcaagtag tcacagcatg 60
catgtgccta gaattgttac gtggtcaaat tatattattg tgtattccca ccaacagtat 120
gagaaggtcc acttctccat acctccacaa ctctgggcat ctaaaacttt taaaatcctg 180
gaatcatagg caaaaaaaaa aaaattcacc catattttcc tctagt 226

<210> 556
<211> 298
<212> DNA
<213> Homo sapien

<400> 556
acttcatata agtggaatca tatagtattt gtccttttct gtctggctta tttcacatat 60
aatgtcttcc aggttcatca tattgtagca catgtcagaa tttcattcct ttttaaggct 120
gaataatatt ccattatgtg tataccacat tttgtttatc cattcatcca tcaatagaca 180
tttgggtatt tccaggacaa tatattctta atttaatccc acattttaag acttacaggt 240
aatttaaatt caattcaact tactgagtat ttactaaggg taactcacta tgggaagt 298

<210> 557
<211> 166
<212> DNA
<213> Homo sapien

<400> 557
actaatggtc tacatccgat tcaaaaccac atagttcatt gatcacagat gcatggtatt 60
agtcacgaaa gtttcagaac acattgtgtt gattttgaaa ggtcatttgc atcttctatg 120
atttcaactt tatctccatt taacttgctt gtaaagtatg tatgat 166

<210> 558
<211> 461
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(461)
<223> n = A,T,C or G

<400> 558
actccctgtt ttgagaaact ttcttgaaga acaccatagc atgctggttg tagttggtgc 60
tcaccactcg gacgaggtaa ctcgttaatc cagggtaact cttaatgtta cccagcgtga 120

actcgccggg ctggcaacct ggaacaaaag tcctgatcca gtagtcacac ttctttttcc 180
taaacaggac ggaggtgaca ttgtagctct tgtcttcttt cagctcatag atggtggcat 240
acatcttttg cgggtctttg tcttctctga gaattgcatt ccctgccagg cctaccacat 300
accacttccc ctggaattgg ttgtcctgga agttctgctg cagagggacc ttgctcagag 360
gtggggctgg gatcaggtct gaggtggagt cctgggcctg ggcatgcaga gcccccaaca 420
gggctaggcc cagccacagg agacctangg gcatgatttc a 461

<210> 559
<211> 193
<212> DNA
<213> Homo sapien

<400> 559
accagacaga atcaggaaaa aaaaattgaa aataagcata acactataaa gaaaacttgg 60
aaaagtgaaa cacttctaaa taaaaaatat acacctggcc tggcacccat tacatatata 120
cataatacat gttataaaca tatatacagt aaatgttttg gtagcaatac agaccatgca 180
ttggtctttg tgt 193

<210> 560
<211> 125
<212> DNA
<213> Homo sapien

<400> 560
acacaattat tctcactctc cacagaaagg ctgcttaact tctcatctgg wggwggsaag 60
cactaaaatc ctgattttaa cagaatagta gkaaaaatgc ctcagtgatt taagttgaaa 120
gcagt 125

<210> 561
<211> 325
<212> DNA
<213> Homo sapien

<400> 561
ccgaggtacc acggcctcag agtcacagct ttgtgacatt agggggcaat ctccagcttt 60
acgttttaga agacagtttg ttttttgatg tatattttta atatccccag attaaagaaa 120
actcagggca agtaacacac taaaagggcc tttacaattt ttttcttgct gttattttga 180
gatgcatctg ttgcaaaata tgtcaatgtt agaaatcaag ctccttcata tagggataga 240
tcatttgaaa tagatttctc tcaagaataa tccaattatt actttttagt gtttgcataa 300
attcactcca gaagtcatcc acagt 325

<210> 562
<211> 303
<212> DNA
<213> Homo sapien

<400> 562
accagatgga aatgatattt gcttcactcc attttgaatt tctgcctgaa ttagctcttg 60
tttcagttct tcaatttctt tcttcagttt agcattttca actcgaagtt tcttctcttc 120
cctcaaagtt gcctgcaaaa ttgctttctc cttaagtaga gaaacttgct gcttaagata 180
ttcaatgatt tgatctgcct ctgcaccctt ctgctccagt ctcttcagaa cagcatcatt 240
atttgccatt tttgccaaga gacggcagaa aatcatgaag cggaggacca cgggttccga 300
gac 303

<210> 563
<211> 279
<212> DNA
<213> Homo sapien

<400> 563
tcgaggtaca cagtcattga agactctccg gaattcagat ttgaaaccat atattatctt 60
cattgcaccc ccttcacaag aaagacttcg ggcattattg gccaaagaag gcaagaatcc 120
aaagcctgaa gagttgagag aaatcattga gaagacaaga gagatggagc agaacaatgg 180
ccactacttt gatacggcaa ttgtgaattc cgatcttgat aaagcctatc aggaattgct 240
taggttaatt aacaaacttg atactgaacc tcagtgggt 279

<210> 564
<211> 427
<212> DNA
<213> Homo sapien

<400> 564
ccgaggtact gtgtagtggt atcagtgtta aaaatggaag atcattatga agaaacaatt 60
tgtcatttgg gtatatctgt ttctatagga caaggatttg tgtctaaata ttccttactt 120
gtatctcaga ggactatctg ttaaataatt gatcttaatg ccagcataag aaatcaaggg 180
aactatttct cagacatttc tttctctaaa ttaagtaggg tttcaggttc caagtttaca 240
ttgagagaac tatgttacct gggagagaat gtaaattttt ctaattccca aacaaaacca 300
ctaatttcta ggaaacattt attgtttata tgcagatcct agagacttct atttcagtgc 360
ggatcaacaa cttcaaaaat atacagcctc ctatttattt acaataatat ttacatacaa 420
atgaagt 427

<210> 565
<211> 214
<212> DNA
<213> Homo sapien

<400> 565
tcgaggtact gggtcttttc cagccaggcc tgcaacggtg accttaatcc cagctcgcct 60
catgacatct acagggatga ccgtctccat ttcctctgct cctttagcca ggatgaccag 120
agctcttttg gaagccattt ttatgttata tgtttacaag ccccacacca ggctgaaaat 180
gaacgcacgc cagcacgcac gcgcgccgtc cggc 214

<210> 566
<211> 382
<212> DNA
<213> Homo sapien

<400> 566
ccgaggtact tttagttttt tcacataact ctctaaaggc cttttcaaaa agtctctttc 60
actggcatca tctactagaa caatttcttc tatcatgtgt cttggtgagc gattaatgac 120
actatggaca gttcgcagaa gtgtgctcca agcctcattg tggaaaacaa tcaccacact 180
tgttgtagga agattatctg gatacacctt tgttttacac ccttctaacc taacatctgg 240
taaagatctg ttgagtgcaa tcatctcact tgccattaaa ttgaactgat tgattttaaa 300
catctctttc atcttttctt gatcctcttt aggaatgacg actggtttcc ccatttctcc 360
aggaccttca tgaggctttt gt 382

<210> 567
<211> 271
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(271)
<223> n = A,T,C or G

<400> 567
cgaggtacaa ttacccacca ctggaggtga ctcagagagg acccccagag ggtgtctcca 60
tcttccctat ttattttcag cccttgaggg cttcattgta gatcaaagcc aaggccccca 120
ggaaggtgac atactcctgg aagttcacct cctggtcctt gttccggncc aagtcttcca 180
tcagccttgc aatttcagca tcctgcagct tcgagccaat ggtgagctcc ttctggatca 240
gctccttcag ctccttcttg ctcagggtgt g 271

<210> 568
<211> 340
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(340)
<223> n = A,T,C or G

<400> 568
cgaggtgcag tgtatattcc tttgttgtga atccaaatct ttttcatagg taatgacaga 60
tgccttaatg tgaagcttat ttataatagc aataaaccta actggatttg gatgaagaag 120
tcttaatact gacatactgg atttttaatg cactggtttg ttatttggta ttctatctct 180
ttttccaggc ctccaggttg cacatttatt tattatgttc aatactttgg ttcttagttc 240
ttaaagaatc aagaagttgt gtaatctttt aaaaatatta tcttgcagat aaagaaaaaa 300
attaagagtg tgtttacaac tgtttnctct tttttacagt 340

<210> 569
<211> 156
<212> DNA
<213> Homo sapien

<400> 569
gccaggtaaa ccaagacttg gtctcagtga agaaattcca gaggtcaccg gcaaagaagt 60
tcccttctca tcatcttcat ctcagctatt aaagatatat acagttgtac agtttgctct 120
gatgttggca ttttatgaag agacctttgc agatac 156

<210> 570
<211> 216
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(216)
<223> n = A,T,C or G

<400> 570
acagtactca gtatatctga gataaactct ataatgtttt ggataaaaat aacattccaa 60
tcactattgt atatatgtgc atgtattttt taaattaaag atgtctagtt gctttttata 120
agaccaagaa ggagaaaatc cgacaacctg gaaagaattt tggtttcact gcttgnatga 180
tggttcccat tcatacccta taaatctcta acaaga 216

<210> 571
<211> 163
<212> DNA
<213> Homo sapien

<400> 571

tcgaggtttt gtaatccaag gttctgacta aaagcaaaaa tacacggcat agattgcaac 60
agcaaagaag tgtccaatta aaactagagg gttaggagac aatacagaaa gcagcccaac 120
aggacccgca acacattcgc caccaagttt tgaaataaag aaa 163

<210> 572
<211> 156
<212> DNA
<213> Homo sapien

<400> 572
gccaacgtgc agcggctgaa ggagtaccgc tccaaactca tcctcttccc caggaagccc 60
tcggcccccа agaagggaga cagttctgct gaagaactga aactggccac ccagctgacc 120
ggaccggtca tgcccgtccg gaacgtctat tagaag 156

<210> 573
<211> 414
<212> DNA
<213> Homo sapien

<400> 573
ctggagccgc tgtggttgct gtccgcggag tggaagcgcg tgcttttgtt tgtgtccctg 60
gccatggcgc tgcagctctc ccgggagcag ggaatcaccc tgcgcgggag cgccgaaatc 120
gtggccgagt tcttctcatt cggcatcaac agcattttat atcagcgtgg catatatcca 180
tctgaaacct ttactcgagt gcagaaatac ggactcacct tgcttgtaac tactgatctt 240
gagctcataa aatacctaaa taatgtggtg gaacaattga aagattggtt atacaagtgt 300
tcagttcaga aactggttgt agttatctca aatattgaaa gtggtgaggt cctggaaaga 360
tggcagtttg atattgagtg tgacaagact gcaaaagatg acagtgcacc caga 414

<210> 574
<211> 414
<212> DNA
<213> Homo sapien

<400> 574
ctggagccgc tgtggttgct gtccgcggag tggaagcgcg tgcttttgtt tgtgtccctg 60
gccatggcgc tgcagctctc ccgggagcag ggaatcaccc tgcgcgggag cgccgaaatc 120
gtggccgagt tcttctcatt cggcatcaac agcattttat atcagcgtgg catatatcca 180
tctgaaacct ttactcgagt gcagaaatac ggactcacct tgcttgtaac tactgatctt 240
gagctcataa aatacctaaa taatgtggtg gaacaattga aagattggtt atacaagtgt 300
tcagttcaga aactggttgt agttatctca aatattgaaa gtggtgaggt cctggaaaga 360
tggcagtttg atattgagtg tgacaagact gcaaaagatg acagtgcacc caga 414

<210> 575
<211> 417
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(417)
<223> n = A,T,C or G

<400> 575
tggtatgggt catataggtt cggtacaaca tgaagccatg gtcctgggta tggaagaatg 60
agtacttcag acaaacagaa ataaaagagg acactgtgac tatagccaag gaacttttgc 120
gtatagctgt taagggaggt tgtcatctcc accagatgtg ggtttatgcc ttacctgctt 180
gacagcctca aaggtcattg gcaagattga atgaatgggc ccacgggggc aaagcaagtc 240
taggaaagcc agtaaatgcc caacctatta gaataaggga gaagaattag aatatcaggg 300

aagtttctgg atagaggaca agaaagaata ggctatttag aaaaaaaaag gtgtggtccc 360
attattttca ggcttcaccc tanatgacac atgagcaaaa gcccacttcg ccatcat 417

<210> 576
<211> 245
<212> DNA
<213> Homo sapien

<400> 576
ggaagggggg accctgccaa agatgaggct ccagctgccc tgggggggagg gtggtggcca 60
ttactagagg gggcctgggt cctctcccca ggggctgcca gcatccaggc caggaagcct 120
ggagccaaga accttctggc tctgagggag caagagctgg caggcggcag ggctggcaca 180
gacagacgga agcagaaagg acagtttggc tgctgtgtct gctgcgcacg ccccctcccc 240
ggaca 245

<210> 577
<211> 418
<212> DNA
<213> Homo sapien

<400> 577
gaaaaccctt taatgttggg ctttctttaa ataaaacaga aaggttgcag ctttcccatg 60
gtggctgtaa ggcaagaaca gcagtgaggg cgggcgtgtt ctatcgggca gtgctgcagc 120
ccttgactct ggctcaaggt gggcttcctg gaggcagcgg caaggaggca gttctggatg 180
tgcaggcaca gatgtagggg aacaggcaag cgggcacagg gccctgagct gacaagcagt 240
gacccctgca cccagctaga tggggcaccc cctctctggg agctgagggc atcagctgga 300
gcctcaggct gggaccagcc ccaactttgc cttggtgact ctgggccatt ccaggcctca 360
gtttccccac tgtaaggtga ggcattaggc aggagggggt ggccccagcc agtgtcct 418

<210> 578
<211> 363
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(363)
<223> n = A,T,C or G

<400> 578
aaagcccaga aggcacttta ttggaggtct ctgcctccat tcacaggaga aaggagctgg 60
gagccccatc ctagggtccc agcatcagcc cactggaggg cctggaacag tccagcactc 120
tgtgggagag gagtggggag gggaatgttt tanaaaaaat agatctctat gtacatctga 180
catatttata tagcacataa attagggagt gctctgaccc ctgcccgtgg agcccaagca 240
ctgagcaggg aggtgaacgc cagtccagaa agaaggtgct ggagcccctg ctctgttctc 300
tccatcacgg ggctccccta gggcctcccc aggcctcctt ggctcagtcc aggtttgtct 360
gca 363

<210> 579
<211> 403
<212> DNA
<213> Homo sapien

<400> 579
ggaataatca gctcttctgg cccacaagta ggaatgatca atgagaactt aacttagtcc 60
tttatttggg gatttttca tcaaacaaaa atttcttgaa ttggggagac cacttccctg 120
taactccagt attgcccct ctcactttag catatattaa ttagcaggtt gggctagaga 180
aatcagctgc tatgcgggtt gattattatt attatttcta atcctttcc ttatttgcct 240

tctactcccc ttaatctaat ctaaaagctc tgttccatgc aactggagtt ccttatccct 300
ctcttcccct tcccttatat attgaggcta tggggtagga gaaaagtgca caacccacca 360
ccccctttac tcgtgcatta aaatttctta tttacccttt tcc 403

<210> 580
<211> 403
<212> DNA
<213> Homo sapien

<400> 580
ggaataatca gctcttctgg cccacaagta ggaatgatca atgagaactt aacttagtcc 60
tttatttggg gattttttca tcaaacaaaa atttcttgaa ttggggagac cacttccctg 120
taactccagt attgcccccct ctcactttag catatattaa ttagcaggtt gggctagaga 180
aatcagctgc tatgcgggtt gattattatt attatttcta atccttttcc ttatttgcct 240
tctactcccc ttaatctaat ctaaaagctc tgttccatgc aactggagtt ccttatccct 300
ctcttcccct tcccttatat attgaggcta tggggtagga gaaaagtgca caacccacca 360
ccccctttac tcgtgcatta aaatttctta tttacccttt tcc 403

<210> 581
<211> 432
<212> DNA
<213> Homo sapien

<400> 581
acctgataaa agttaataat ctcttgttag gaaagctgtc cattaataag gccagtcttc 60
agcaaaacta aaaccatttt gttcgtttag ctttcctagt ctgacaacgc aatactgttg 120
aaccacagtc aaatataatg acaacattgg atggatagat cagtaccatt ggttacagct 180
gttaaacagg ttcgttcttg gcgccacata aaaacaagcc aataacatcg aataaatcat 240
ggcttttttt ttctttatca caattcactt aagtgatgtt aattatggtc cttgtcaaac 300
acgtttggta aaggctattt acagtgtaca tggctgagca tgcactattt atagttacaa 360
agatacctgc cagtttatta caatagaata cacagtgctg aaatggtgaa ctctcccatc 420
ttaatatata tt 432

<210> 582
<211> 215
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(215)
<223> n = A,T,C or G

<400> 582
gtttatttca gctttactta aaattttagt ttcaaatgaa atgaaatgtg acactgaagc 60
ataagaacac aactgaagac tgcaaacaac ctaattcatt ttcccaggtt gcttaagcct 120
ncaagcacca ntcaaatatc gnantcnatt aaaagnaggn ctttcccatt tgtngccngc 180
ttcngaatgg aacntattta aaaccntcaa tttct 215

<210> 583
<211> 426
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(426)
<223> n = A,T,C or G

<400> 583
tgggcgcctg tgggactggg tgcctctggc gtgcagaagc ttctctcttg gtgtgcctag 60
attgatcggt ataaggctca ctctcccgcc ccccaaagtg gttgatcgtt ggaacgagaa 120
aagggccatg ttcggagtgt atgacaacat cgggatcctg ggaaactttg aaaagcaccc 180
caaagaactg atcagggggc ccatatggct tcgaggttgg aaagggaatg aattgcaacg 240
ttgtatccga aagaggaaaa tggttggaag tagaatgttc gctgatgacc tgcacaacct 300
taataaacgc atccgctatc tctacaaaca ctttaaccga catgggaagt ttcgatagaa 360
gagaaagctg agaacttcgg aaaaggctca tctgtcaccc tggagaangg aaactgtact 420
tttccc 426

<210> 584
<211> 431
<212> DNA
<213> Homo sapien

<400> 584
cactgttgct gttttcagat acaccagaag agggcatcag atctcattat gggtggttgt 60
gagccaccat gtggttgctg ggatttgaac tcaggacctt cggaagaaca gtcagtgctc 120
ttaaccactg agccatctct ccagcccaga tttccttttg atggtgaagc attttaattt 180
taccattttg ctttgaaagg gcactgctct atgttctggc actatcggta ttctggactc 240
ctcttcgtaa aacatttctt tataacaaaa ggtgcactta cttttatttc ggtgtgtgtt 300
ttgcctgcat gaacgacttg acatctcaag cctacctggt gtctggagag gcccgaacag 360
gatgtcagat gccctagaac tagagatacc gaccgttgtg cgctaccatc tgggtgctgg 420
gaattgaact a 431

<210> 585
<211> 412
<212> DNA
<213> Homo sapien

<400> 585
aagagagaaa gagaacattt ttataccaag gagggattga ctttcagaaa agagtagact 60
tctctctcct cccttcctcc aaaaaaagaa gttggaaacc ttctgttttt gtgtgtgtgt 120
ttttggttgt tctttgtttg tttttgtttt tgagatggag tctcactctg tcacccacgc 180
tactgcagtc agcctgggtg acagagtaag attctgtctc aaaagaaaaa aaaagacaga 240
aaagaaatgg actctgatgg aaaagatgtg tacaaggctg attatactaa gcagagggat 300
atttaaataa atgctaagaa gagaggcagg tgaagctcca ggggagccat ccttcccaaa 360
tgttcactta aattttcagc ggtttgggta tgccagatgg tgaacctagg ta 412

<210> 586
<211> 431
<212> DNA
<213> Homo sapien

<400> 586
aagaaaaggg agccaagaag aaagtggttg atccattttc taagaaagat tggtatgatg 60
tgaaagcacc tgctatgttc aatataagaa atattggaaa gacgctcgtc accaggaccc 120
aaggaaccaa aattgcatct gatggtctca agggtcgtgt gtttgaagtg agtcttgctg 180
atttgcagaa tgatgaagtt gcatttagaa aattcaagct gattactgaa gatgttcagg 240
gtaaaaactg cctgactaac ttccatggca tggatcttac ccgtgacaaa atgtgttcca 300
tggtcaaaaa atggcagaca atgattgaag ctcacgttga tgtcaagact accgatggtt 360
acttgcttcg tctgttctgt gttggtttta ctaaaaaacg caacaatcag atacggaaga 420
cctcttatgc t 431

<210> 587
<211> 132
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(132)
<223> n = A,T,C or G

<400> 587
aactttccca tggtcaaagg aaaaacaagc aggagttgag tggctggggt ggggtgcagg 60
caatggagag agggcataag ggtgtagaan ctgaaggggg ctagaagctt actcctgagc 120
ttcttacntc cg 132

<210> 588
<211> 425
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(425)
<223> n = A,T,C or G

<400> 588
gggcttcttc aangaacctc agctgaaacc tntgggggat tactganttg atntgnccac 60
cagaacaggn gngctcgctt ttgttctgaa atcaaatcct cnaaagaccg ggagaagggg 120
tcacccannc gtggatcgtt ggcattgtgg gaaaagggaa accgnaacgg cccggatcat 180
tgacaagccn cgaagttatt gaagtcctgc ctcgtggggc cacagctgct tgttcttgct 240
cctgacagtt caaatgcctc ctttgagcct agctcgtgag atgaaagaac agaagttgtt 300
tggaccttag agccattatc cacaatcacg gatggttctc aagagttgat tgtaagaaat 360
ttccaaagaa ggctgcctgc atagtggttc cggctgccct ttctaggtga ttggaatcan 420
cccat 425

<210> 589
<211> 425
<212> DNA
<213> Homo sapien

<400> 589
caacagttat tttattagga tgtcagccct gggtccagag tgagagatag ggacagggga 60
cagcccagcg aggctgggtc gggggtcact ccaggatgtt ccaaccacag gggcagcatc 120
tcctccactc cacatgctgg ccaagggcac agagctgccg tatcgcctgc caaggggggtg 180
gctcaatgct gctgccctgg tcctgtatgg gcccggggtg ccgagaacag acagcaagcc 240
tcaggcgccg gtcctttgag ctttcttgat ttcctcagag agcgcctcct tcagctctgc 300
gtaggcctgg tccaggctgt cgttaatgat gaccacatca aacaggccgg gctccttgct 360
gctctccatg tcggcctggg cagcagccag ccgcttcacc aggctctcct cggtttcagt 420
gttgc 425

<210> 590
<211> 425
<212> DNA
<213> Homo sapien

<400> 590
acaagtatac atataatcta gataagggct gtaatgtttc ctaatattaa ttactgtact 60
taaaaattta caggacatga acataaataa agctgtttaa aactggcaaa cgtagtaata 120
gtctgtcatt cagtacaagg tatatttatg ttatttccaa agccatcacc ctaaaatcct 180
aagttgccac tcttaaaacc taaaaataat gtcgaaaact aaagtcataa atacatgtat 240
acatacattt gcatatttac acttatgcag aaatcatcaa tatactagag cccagcttta 300

acactgtcct tcagtttcac acagaaggac ccctaataac tgtaaatata taaatatgtc 360
aggttaaagg gaaaaggtgt tcagggcact tcttgtcctc tctgtcccat aacctacctc 420
caccc 425

<210> 591
<211> 425
<212> DNA
<213> Homo sapien

<400> 591
aagtatgtat gtacaagact caagtaaata gaaaggcagc tttcaatcac aaatcagttt 60
ttcagatttt actgtggaag catatttaat gcacacattt gaatgttaca cataaataat 120
tttaacgatg gagtccaagt tctggatttt acattagatc tgcatatata agacacttgt 180
ggtcaaattt caagattggt aaagccagtt tcaagctgct tatattttga gtacaggttt 240
cactattaca aatatatgat gttaaactaa caaactcatg accttcaaag atgtcttcgt 300
cccacgcaca cacatttgta atttgtgtcc atttgctatt tcccttcttc tataatcttc 360
aaattatata gttatgcatt gagttcccta tgcatctcac ccatctcctt tatctcagcc 420
ttctc 425

<210> 592
<211> 299
<212> DNA
<213> Homo sapien

<400> 592
agtgaaaatg ggttggtttt tgtcttcgac gctcagggtc tgggcgcctc gcatttgcag 60
tctgttgtga cagacacggg gagctccgcg tgccagcctg tggctgccct gctgtggggg 120
tcctggggcc ggcgaggccc cttcagtctt gttctggggg gacggcccac tccggggagg 180
gggtgtgctg tgctgagcgc tgtatccctg aatatagttt atttttcta catttgaatt 240
ctgttgtaga tttatgtaaa aatacattct ttttgaaaat aaaaattttc atgtcttct 299

<210> 593
<211> 425
<212> DNA
<213> Homo sapien

<400> 593
ttttttttc tttttcccag gaggcggcga cggcggcggc ggggggagag gaagagaaag 60
aagcgtctcc agctgaagcc aatgcagccc tccggctctc cgcgaagaag ttccctgccc 120
cgatgagccc ccgccgtgcg tccccgacta tccccaggcg ggcgtggggc accgggccca 180
gcgccgacga tcgctgccgt tttgcccttg ggagtaggat gtggtgaaag gatggggctt 240
ctcccttacg gggctcacaa tggccagaaa agattccgtg aagtgtctgc gctgcctgct 300
ctacgccctc aatctgctct tttggaatca tcacattcca cttctaaaag gagctttaaa 360
gatggcctgg ttgaacgtcc ttcctttgtg agtgaggaaa ttaagtgcag attaagtgac 420
ttgcc 425

<210> 594
<211> 425
<212> DNA
<213> Homo sapien

<400> 594
gtcactagct ggctaaggct taaagcagag acgtgtgact gggtctctcg ggagggcctc 60
tggttcttcc cgggctcagg cttgctgggg gctgggggcc agggctctgg cgacctagag 120
gtgtggacgg cacagctgca ggaggccttc tcttaaccct ccgagagtgg gactgggaga 180
tttcctctga agtcccaaag aggccctgtg cccaggggac ctcctcctcg gcctcccagg 240
tgggtggtgc aagctggttc ttggccatgc tccaggctcg ggtgggcaca ggcgtccact 300
ccagtgtgct gcgtgcttgt gagactgcct gttctgggac cagcccctgg gctcttccac 360

caagatttgg tgagggtccc cctctgcctc tcacagaagc ccctggccct ggactgtcct 420
ggggg 425

<210> 595
<211> 162
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(162)
<223> n = A,T,C or G

<400> 595
ctttacatta tttttttcc aaaaagacta gtatttatac aangggcaat agaaacaaaa 60
acaaaaaccc ttccgactgc cacctggaag gggctggctg gnctgctccc tctcccacct 120
ggaacngggg ggggcactgg gcaggaggga atgnggangn gg 162

<210> 596
<211> 283
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(283)
<223> n = A,T,C or G

<400> 596
aaggtgactc aacaccntct tcctcaagga cttcttggtg atactctctt gtcttttcca 60
gttaccctct tcctcctttg tcctctgtgc ttgggctcac aacttnatgg nctgnacttn 120
ataaaanaac natggcaact ttgncctgan tgncnccctn cccaanctga nctggntgga 180
anaagaaact tggaaactat ntnanccatg gntttgggan nctncccccct tncccatgnc 240
tnctaataaa accatgcant gcctttggag agaagagacc ccc 283

<210> 597
<211> 426
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(426)
<223> n = A,T,C or G

<400> 597
gaaatacaaa tgtggattct catcactgaa aaatctttga ngntgngttt attcctttca 60
tcatttttta aatatttttt ttactgccta tgggctgtga tgtatataga agttgtacat 120
taaacatacc ctcatttttt tcttttcttt tttttttttt tttttagccc aaagttttag 180
tttctttttc atgatgnggn acctccnaag ngatggnaga tttaaataat tttttatttt 240
tattttatat atttnttcat tagggccttt tctcccnaaa acgaaanaaa aantccnaaa 300
aacnaaaccc aaaaaaanag agggtantgt ccnagtttct gtatgtataa agtcntncnc 360
gatttcagga gagcnctgnn cccaatttgc tccntgaatc aaggngngna aatggttttt 420
ttggcg 426

<210> 598
<211> 412
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(412)
<223> n = A,T,C or G

<400> 598
```
tttttttttt ttttttttg ccacctagag atgataattt attgttttac catgactcag 60
aagagaaaca acataaagag aatatttcaa atccccacaa tttccttctc aacctcacta 120
ctcttaacat ttctttatca gacgccactg gcttcctaaa atggaccctg gactatgtat 180
ggggaccaca ttcattatgc tgcctttcct cttatgatta aaactttagc cctcattcga 240
nggttccaat ggtactttta gnggaggagt ccctagcttt taaaaaaacc acttttcctn 300
taaaatccnt tntttatnga aaaaaancnt ttttaaaaat gttaaggagg attttaaatg 360
accatattca attaaaaaaa aaatnccttn tggaacatnt tngcagaaac ct 412
```

<210> 599
<211> 415
<212> DNA
<213> Homo sapien

<400> 599
```
ccaagatgac aaagaaaaga aggaacaatg gtcgtgccaa aaagggccgc ggccacgtgc 60
agcctattcg ctgcactaac tgtgcccgat gcgtgcccaa ggacaaggcc attaagaaat 120
tcgtcattcg aaacatagtg gaggccgcag cagtcaggga catttctgaa gcgagcgtct 180
tcgatgccta tgtgcttccc aagctgtatg tgaagctaca ttactgtgtg agttgtgcaa 240
ttcacagcaa agtagtcagg aatcgatctc gtgaagcccg caaggaccga acacccccac 300
cccgatttag acctgcgggt gctgccccac gtcccccacc aaagcccatg taaggagctg 360
agttcttaaa gactgaagac aggctattct ctggagaaaa ataaaatgga aattg 415
```

<210> 600
<211> 208
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(208)
<223> n = A,T,C or G

<400> 600
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aaaccgcctt tttttttttt tttttttaa tatgcagttt gtaanaacaa aactggatgg 60
catcanaatt gtctggaagt tttgtcttgg gcagtatggg ctgggccaaa tgaaatgatt 120
tttataattc taaacaggtt accaaatgaa atgtcatggc tttactttgg caattaaagg 180
ggggaatttt tttaaaaaaa aaaaaaaa 208
```

<210> 601
<211> 165
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(165)
<223> n = A,T,C or G

<400> 601
```
tgcaggtcga cactagtgna tccaaagaaa gtaacctaaa cttgacctgc ttaatacatt 60
```

```
ctagggcaga gaacccagga tgggacacta aaaaaatgtg tttatttcat tatctgcttg     120
gatttatttg tgtttttgta acacaaaaaa taaatgtttt gatat                    165

      <210> 602
      <211> 416
      <212> DNA
      <213> Homo sapien

      <400> 602
aaaacggttt tgccgagttg ggacgtccac tgctgtcaag tcaaccagag atttgaactg      60
tgcattggtg tgatccctga ggaaagtcag cactgggatg acgccatcag gatggataca     120
gacctctaac tcattgaagc aggacacctg aacttgttgg acatacttgg gcaagatttc     180
agccacatac tctccaaaag ctgagagctg cttgtgggcc acatcattcc gtggtctgac     240
agtggggcgc gtgtcggccc cggcgctctc ccgcctcacc ggcagcaaca gaacggaggg     300
tcgcccagtc cccctggtca gcgccgaggc ccccaagatc ccgcgccacc acagcctggc     360
taccgccgcc gcgagtactt ctagagcggc cgcgggccca tcgattttcc acccgg         416

      <210> 603
      <211> 416
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(416)
      <223> n = A,T,C or G

      <400> 603
catgagcata aaaaaaaaac ccaaacctgt nccatacccc tcccactcat gcaaacagct      60
cttaaaatga agaattcttt caaaatttta cgtttttttnc attcttggct caattctttt     120
gctttcctca tcatcagaat tcaaactttg ggcaaacatg ggttttgggc tgantctttg     180
gaatatgctg gaaaaacccc aatatgggct gcttctgctt gtttggcatg acgcaaaatg     240
gnttcccang atactgcatc gtcttgccaa gaatgttcca ttagaaaaag gcccgggtcc     300
tcgccacact ggctggcctc tgctgggtgc ntctagagta tatcggctgc acctcagtgc     360
atctgtccat aatttttttg aaaaaaaaaa ctcaatctta acgcgggcat attcnc         416

      <210> 604
      <211> 414
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(414)
      <223> n = A,T,C or G

      <400> 604
aaaatttatg agctttatta aagcggttta tcacaaagat ggaaacgtac aaatgagaag      60
catgcaacca tcatcttcca cagtcaagtc aaactgctat ttctctctct ctcctgtttc     120
atagagctgg aaactgcagg tgttataccc aacctattca tcctcaacac tgtagtcacg     180
ccccggaaac tactcagggc accaaacatc caaaacataa actattatta tacaaagaaa     240
gtgcaaagtt aaaaaagaaa acatggagac ccctcccccc cataccctca nctaaaggct     300
aacaatggca cttgggctct tgcttaatct agattgtctt caaaaagtct ctaaaatgng     360
atactgngng nggngggggg ngngaanggt ccaaaagctn cttagtgttt gaaa           414

      <210> 605
      <211> 417
      <212> DNA
```

<213> Homo sapien

<400> 605
tcctctttca caatcactca acaaacaggt cacacatccc ctaggtccac gaactcatct 60
tctcgtttgg ccaaatcgtc ttcatctccc aaagctttcc agccactggt gggtaagacg 120
ggcttagagg aatgtcgctg gagcagagcg aaaggaaaca aagacgagag gcgggcagag 180
ttcctcagca ggcagggggc ctcagcctgg ggggcctgct ggctgtggtg tctctcgtcg 240
atcttctctt gtaaactctg gacttcctcc atcatttcca agagtttgct cagagtggcc 300
acttggccac cacctaggat ttgggcttct ggaatccaac gtaggtagcg ctgggcccag 360
actttgattt cgggcccctc gatatgcggt aacaacaaac catggtagtc agtggac 417

<210> 606
<211> 413
<212> DNA
<213> Homo sapien

<400> 606
ctgaattctt taatttaaaa aaatcatacc taggaggtgt gctataggaa ttcagataca 60
ataagttgca tataaaaccc gacctcattg ctcattgtgg taaagcaagg atgatgagaa 120
aatgcacctc aggagcaaaa acacgcttta cgggcactcc gggacccaag tcccgagaca 180
tttccacgtg accttctgga aagacacacc gcccacctga ctgcacgacg ggactggtcc 240
agcctcccgg ctcctcagga aggagatgag tttcctacaa agtgagtggc cacagctcca 300
ggacagggcg tccacatgtc gttgtgggtc tggctggatt ttgaggtgcc gaggaactgg 360
tcggtgtcct gatcgtattg tacgtggtgc tctcgatctc ccaactgcca taa 413

<210> 607
<211> 414
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(414)
<223> n = A,T,C or G

<400> 607
attttcatta aaactgtcag aatttgctta ctataattat gatacagtcc aaagaatgca 60
gtcacttttt atcatgttaa ctaattgttc tcttttgaag atctatggtt gactaattaa 120
acaataattc aagtagagtg tcccagaaaa aaaccacttg ggctccctgt ttggagtctg 180
gctggctctg agcattgcca atggccccta ctcacctgac tttgtatcct ctccttttag 240
aggctttgca ttctgcaccc agcttcacta acagtgggct gaaaacatcc ttgggttgag 300
tgtttcattt gggagttatt tggccagggc cttttgaaca gtaagtgtcc ccatgaagtg 360
ctagataata tatggngtaa agangtcagc tttttttttt tttttaactc taac 414

<210> 608
<211> 415
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(415)
<223> n = A,T,C or G

<400> 608
gcagtggtct gatcttaagg gnctatatat ttgcacctcc tcattcaaca cagggctgga 60
ggttctacaa caggaaatca ggcctacagc atcctgtgta tcttgcagtt gggattttta 120
aacatactat aaagtctgtg ttggtatagt acccttcata aggaaaaaat gaagtaatgc 180

ctataagtag caggcctttg tacctcagtg tgaagagaaa tcaagagatg ctaaaagctt 240
tacaatggaa gtggcctcat ggatgaatcc ggggtatgag cccagganaa cgtgctgctt 300
tttggtnacn tatccctttt tntcttaaga aagcanggtn ctntcttatt annaaatatg 360
ttaaaaaatg gnaagcaaac nacaggtgcc tttanaaatt accaattntt aactt 415

<210> 609
<211> 420
<212> DNA
<213> Homo sapien

<400> 609
ggttttaaaa ttatttcttg aatctctcca tacacaggca aaaataagtg tgttacttaa 60
catactggaa attgcctaac ttaatcattg cctaaagaag agaaaattat ccccaaaacg 120
tgcttaacca ggaggccaat gcatttgccg acctccaaga acatggagat gaacgtgata 180
gacagactgt ccaccatctg aaccttcatt caccaccatt cgataaccct tattcaggcc 240
cagatcagca gcacatttct tgccaacaat cattaagtgt ccaagaagac tttcatcatc 300
atcttctgcc acagaaatct gggatatatg tttcttgggt atcaccagaa aatgtgttgg 360
tgcttgaggg gaaatgtcat ggaaagcaag gcaccggtca tccttaaaaa tgatttggc 420

<210> 610
<211> 158
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(158)
<223> n = A,T,C or G

<400> 610
caactttaaa aaaaaggggg cggtnaaana nccaaanata aaaaggtccc tttggtggat 60
aaaggncccct ttccgggacc ggnccnggac ccacctttgg gcccaaaggg ggatttaccg 120
ggtaaaccaa gcctttaaag cgttgggggt taaatttc 158

<210> 611
<211> 159
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(159)
<223> n = A,T,C or G

<400> 611
tcgacactag tggatccaaa ggaagatggc ggacattcag actgagcgtg cctaccaaaa 60
gcagccgacc atctttcaaa acaagaagag ggtcctgctg ggagaaactg gcaaggagaa 120
gctcccgcgg tnctacaaga acatcgntct gngnttcaa 159

<210> 612
<211> 419
<212> DNA
<213> Homo sapien

<400> 612
gcatttttta ttaagacatt tggggcccga gtttcctctc ctcctcccct ccatcctgtg 60
ctctctaaat tcagcttttg gaaacctaag tgtgcccacc ttccccagca ggtagccaga 120
gcctccgggg tccctcttcc ttccttcttt ctccccagat actgcaagag acacccaagt 180

ctgctgtcag cagagggtga agcgtctggc actgatgttc atgcgcgtga gtcccagatg 240
ccgcagcggt ggggccagag gcaagccagt cccagactct aactccatct ccagctcagc 300
ctcatccaga agctcctggt gcaggtgaca gacttggtcc actttcagtc tgtgcagccg 360
ggcccgcagc ctgagcagct gccctgccag ctgccggtcc tgagcccgca tctcctgca 419

<210> 613
<211> 419
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(419)
<223> n = A,T,C or G

<400> 613
ccccatactg aggcatataa agtttgcaaa accaaggggc ctgtcttccc aaggtcttac 60
tataaaatct gggttaggct aaaacttatt atgtagacca gagaggcgtt gattttaaac 120
caatcatcct gtctcatctt cattatttct ggctttatga gcagaatgtc ctgctacctt 180
tggcttctta taaagatctt taatggagta ttttaaacat tggaaaatcc atgagtttga 240
gcttatttgg agaatgctgc taagaatggg attgactgac ataacttact agcctctttc 300
ctgcttgagg tacagcagtt ttcaatccca atgtgtaaag tgcttagaag ttatcactcc 360
ccaccttaga gcaaaaacct tcagagaact tcagncactc caccaggcaa atagcacct 419

<210> 614
<211> 123
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(123)
<223> n = A,T,C or G

<400> 614
gnggtatgga ctagaaaact tggaatgact catgaanaaa ccttggaatg acacatgaag 60
catgataggg aaantnattc tgaggcnnga ngcttnactg aattntttcc anccagnggt 120
ntt 123

<210> 615
<211> 362
<212> DNA
<213> Homo sapien

<400> 615
gaccttgagg tttcatcggg tgattgccct tgatttctta ggctttggct tcagtgacaa 60
accgagacca catcactatt ccatatttga gcaggccagc atcgtggaag cgcttttgcg 120
gcatctgggg ctccagaacc gcaggatcaa ccttctttct catgactatg gagatattgt 180
tgctcaggag cttctctaca ggtacaagca gaatcgatct ggtcggctta ccataaagag 240
tctctgtctg tcaaatggag gtatctttcc tgagactcac cgtccactcc ttctccaaaa 300
gctactcaaa gatggaggtg tgctgtcacc catcctcaca cgactgatga acttctttgt 360
at 362

<210> 616
<211> 210
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(210)
<223> n = A,T,C or G

<400> 616
tgatgccacc ccgtcacccc tcccctcctg agcagggatc caagaatgtg ccaagagtcc 60
cgccagcctc agccaggtgg gcctgtatat agggtccatg tgcaataggg agggacgtct 120
tctatttttt gctgcccct ccccgcccac tgtctngggg caggggggaga aggtattttc 180
nagataaagc acangcacca caaataaaag 210

<210> 617
<211> 511
<212> DNA
<213> Homo sapien

<400> 617
acgagctttc gtggctcact ccctttcctc tgctgccgct cggtcacgct tgtgcccgaa 60
ggaggaaaca gtgacagacc tggagactgc agttctctat ccttcacaca gctctttcac 120
catgcctgga tcacttcctt tgaatgcaga agcttgctgg ccaaaagatg tgggaattgt 180
tgcccttgag atctattttc cttctcaata tgttgatcaa gcagagttgg aaaaatatga 240
tggtgtagat gctggaaagt ataccattgg cttgggccag gccaagatgg gcttctgcac 300
agatagagaa gatattaact ctctttgcat gactgtggtt cagaatctta tggagagaaa 360
taacctttcc tatgattgca ttgggcggct ggaagttgga acagagacaa tcatcgacaa 420
atcaaagtct gtgaagacta atttgatgca gctgtttgaa gagtctggga atacagatat 480
agaaggaatc gacacaacta atgcatgcta t 511

<210> 618
<211> 511
<212> DNA
<213> Homo sapien

<400> 618
acgaggccac agaggcggcg gagagatggc cttcagcggt tcccaggctc cctacctgag 60
tccagctgtc ccctttctg ggactattca aggaggtctc caggacggac ttcagatcac 120
tgtcaatggg accgttctca gctccagtgg aaccaggttt gctgtgaact ttcagactgg 180
cttcagtgga aatgacattg ccttccactt caaccctcgg tttgaagatg gagggtacgt 240
ggtgtgcaac acgaggcaga acggaagctg gggcccgag gagaggaaga cacacatgcc 300
tttccagaag ggggatgccct ttgacctctg cttcctggtg cagagctcag atttcaaggt 360
gatggtgaac gggatcctct tcgtgcagta cttccaccgc gtgcccttcc accgtgtgga 420
caccatctcc gtcaatggct ctgtgcagct gtcctacatc agcttccagc ctcccggcgt 480
gtggcctgcc aacccggctc ccattaccca g 511

<210> 619
<211> 413
<212> DNA
<213> Homo sapien

<400> 619
gaattcggca cgagctggac aggagaagag cctggctgct gaaggcaggg ctgacacgac 60
cacgggcagc attgctggag ccccagagga tgaaagatcg cagagcacag ccccccaggc 120
accagagtgc ttcgaccctg ccggaccggc tgggctcgtg aggccgacat ctggcctttc 180
ccagggccca ggaaaggaaa ccttggaaag tgctctaatc gctctagact ctgaaaaacc 240
caagaaactt cgcttccacc caaagcagct gtacttctct gccaggcagg gtgagctgca 300
gaaggtgctt ctcatgctgg ttgatggaat tgatcccaac ttcaaaatgg agcaccaaag 360
taagcgttcc ccattacatg ctgctgcgga ggctggccac gtggacatct gcc 413

<210> 620
<211> 415
<212> DNA
<213> Homo sapien

<400> 620
gaattcggca cgagcggcga cggtggtggt gactgagcgg agcccggtga caggatgttg 60
gtgttggtat taggagatct gcacatccca caccggtgca acagtttgcc agctaaattc 120
aaaaaactcc tggtgccagg aaaaattcag cacattctct gcacaggaaa cctttgcacc 180
aaagagagtt atgactatct caagactctg gctggtgatg ttcatattgt gagaggagac 240
ttcgatgaga atctgaatta tccagaacag aaagttgtga ctgttggaca gttcaaaatt 300
ggtctgatcc atggacatca agttattcca tggggagata tggccagctt agccctgttg 360
cagaggcaat ttgatgtgga cattcttatc tcgggacaca cacacaaatt tgaag 415

<210> 621
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 621
agaattcngc acgagtggca gcctaagccg tgggagggtt ccagtcgaga atgggaagat 60
gaaagacttc agatggaaca gaaataaatg cctttttga caaacgcagc agtgcgtgcc 120
tctagcttgc aagagcgtta ctccccttca tagctttaaa aggttttcgc actgcgtgca 180
gttagagtag ctaaatcttg tgtgacgctc cacaaacact tgtaagaatt ttgcagagaa 240
agataaccgt tgccacccaa tgccccccac aggcattcta ctccccagta cctcttaggg 300
tgggagaaat ggtgaagagt tgttcctaca acttgctaac ctagtggaca gggtagtaga 360
ttagcatcat ccggatagat gtgaagagga cggctgtttg gataataatt aaggataaaa 420
t 421

<210> 622
<211> 431
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(431)
<223> n = A,T,C or G

<400> 622
cccggggngg ncctggncat aaaactttaa attttactag tgttacttaa tgtatattct 60
aaaaagagaa tgcagtaact aatgccctaa atgtttgatc tctgtttgtc attacttttt 120
caaaattatt tttttctgta aagtataata tataaaactt cttgcttaaa ttgaatttct 180
atattagtgg ttaattgcag tttattaaag ggatcattat cagtaatttc atagcaactg 240
ttctagtgtt ttgtgttttt aaaacagaat taggaatttg agatatctga ttatattttt 300
catatgaatc acagacctcg gccgcgacca cgctaagggc gaattccagc acactggcgg 360
ccgctactag tggatccgag ctcggtacca agcttgggcg taatcatggt catagcctgt 420
ttcctgtgtg a 431

<210> 623
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 623
agaattcggc acgaggaaac atggactgcc ccttaaattt tgactgtcct aaaaacctat 60
ttctgattta taatatgctg nctgataaag tgacactaga ngnaccnact nnatggttta 120
aatcttccca ttcccagaat ccagaatttt ggaagccatt ttaaccaggg gtatttttttn 180
caccattacc ttttggaact ttccaaatta atggcctttt aaaaaggttg gaaggggaaa 240
accaaaaggc caaaatttta aaaaggttgg ggggggggaac cttaaaaaaa aaaatgggtt 300
ttggggccnc cttttttttaa aaggccaaaa nttttttggg ttccaattaa aaaaatttcc 360
tttttccaac ccaaaattaa gaaaaggnaa aattaaaaaa attncaaaaa ttggnttttt 420
t 421

<210> 624
<211> 421
<212> DNA
<213> Homo sapien

<400> 624
aagaattcgg cacgagcgga tgtgctcact gacattctac tccaagtcgg agatgcagat 60
ccactccaag tcacacaccg agaccaagcc ccacaagtgc ccacattgct ccaagacctt 120
cgccaacagc tcctacctgg cccagcacat ccgtatacac tcaggggcta agccctacag 180
ttgtaacttc tgtgagaaat ccttccgcca gctctcccac cttcagcagc acacccgaat 240
ccacactggt gatagaccat acaaatgtgc acacccaggc tgtgagaaag ccttcacaca 300
actctccaat ctgcagtccc acagacggca acacaacaaa gataaaccct tcaagtgcca 360
caactgtcat cgggcgtaca cggatgcagc ctcactagag gtgcacctgt ctacgcacac 420
a 421

<210> 625
<211> 421
<212> DNA
<213> Homo sapien

<400> 625
agaattcggc acgagctact ccttgcgcgc tggcactccg cagcctttaa ggttcgcgcg 60
ggggccaggc aagagttagc catgaagagc ctcaagtccc gcctgaggag gcaggacgtg 120
cccggccccg cgtcgtctgg cgccgccgcc gccagcgcgc atgcagcaga ttggaataaa 180
tatgatgacc gattgatgaa agcagcagaa agggggggatg tagaaaaagt gacgtcaatc 240
cttgctaaaa agggggtcaa tccaggcaaa ctagatgtgg aaggcagatc tgtcttccat 300
gttgtgacct caaaggggaa tcttgagtgt ttgaatgcca tccttataca tggagttgat 360
attacaacca gtgacactgc agggagaaat gctcttcacc tggctgctaa gtatggacat 420
g 421

<210> 626
<211> 476
<212> DNA
<213> Homo sapien

<400> 626
agaattgatc tatagattta atgcaatgcc tactaaaatc ccagtacgat tttttacagg 60
catagacaat agacatagcc aaaacttatt ctaaaataca tatgaagatg cacaggccct 120
agttatacaa tcttgacaaa gaagaataaa gtgggaagaa tctatttgat tttaaggctt 180
accatgtaac tacagtcatc aagagagtgt ggtatcggca gacggtcaga catacagatc 240
aatggaatgt aacagaggac ccagaaatag gcccacacag atatgctcaa tggatatttg 300
acaagcgtgc aaaacaattc aatggaagaa taagctttca aaaaaatggc gttggagcaa 360

ccggacatcc ataggaaaaa atgaacccat acctaaacca taaaccttat ataaaaataa 420
acacaaaatg aatcataggc ttaaatgtaa gctataaaac ttttagagaa aaacac 476

<210> 627
<211> 503
<212> DNA
<213> Homo sapien

<400> 627
tagccctcgg tgaagcccca gaccacagct atgagtccct tcgtgtgacg tctgcgcaga 60
aacatgttct gcatgtccag ctcaaccggc ccaacaagag gaatgccatg aacaaggtct 120
tctggagaga gatggtagag tgcttcaaca agatttcgag agacgctgac tgtcgggcgg 180
tggtgatctc tggtgcagga aaaatgttca ctgcaggtat tgacctgatg gacatggctt 240
cggacatcct gcagcccaaa ggagatgatg tggcccggat cagctggtac ctccgtgaca 300
tcatcactcg ataccaggag accttcaacg tcatcgagag gtgccccaag cccgtgattg 360
ctgccgtcca tgggggctgc attggcggag gtgtggacct tgtcaccgcc tgtgacatcc 420
ggtactgtgc ccaggatgct ttcttccagg tgaaggaggt ggacgtgggt ttggctgccc 480
atgtaggaac actgcagcgc ctg 503

<210> 628
<211> 248
<212> DNA
<213> Homo sapien

<400> 628
taagtccagg gggaataact gtaggcattc ctggaatcac tgtcttctgt tccattgtgt 60
cttggttcca gcggctcctc ttccgcttct tacttgggaa gtccaacggc gtggcgttcg 120
ctccggtcgc catggcgccc ccggggacag gcaccggcac ctgcttttcc tctgcggcgg 180
cttctccttc gcaagcctcc cggggggagg ggacccgaat gcgctgccgg agcgcgcgga 240
gcccgtcc 248

<210> 629
<211> 99
<212> DNA
<213> Homo sapien

<400> 629
actgccagtc caaaggcatc gtggtgaccg cctacagccc cctcggctct cctgacaggc 60
cctgggccaa gcccgaggac ccttctctcc tggaggatc 99

<210> 630
<211> 640
<212> DNA
<213> Homo sapien

<400> 630
gaagacatga tgctacactc agctttgggt ctctgcctct tactcgtcac agtttcttcc 60
aaccttgcca ttgcaataaa aaaggaaaag aggcctcctc agacactctc aagaggatgg 120
ggagatgaca tcacttgggt acaaacttat gaagaaggtc tcttttatgc tcaaaaaagt 180
aagaagccat taatggttat tcatcacctg gaggattgtc aatactctca agcactaaag 240
aaagtatttg cccaaaatga agaaatacaa gaaatggctc agaataagtt catcatgcta 300
aaccttatgc atgaaaccac tgataagaat ttatcacctg atgggcaata tgtgcctaga 360
atcatgtttg tagacccttc tttaacagtt agagctgaca tagctggaag atactctaac 420
agattgtaca catatgagcc tcgggattta cccctattga tagaaaacat gaagaaagca 480
ttaagactta ttcagtcaga gctataagag atgatggaaa aaagccttca cttcaaagaa 540
gtcaaatttc atgaagaaaa cctctggcac attgacaaat actaaatgtg caagtatata 600
gattttgtaa tattactatt tagttttttt aatgtgtttg 640

<210> 631
<211> 168
<212> PRT
<213> Homo sapien

<400> 631
Glu Asp Met Met Leu His Ser Ala Leu Gly Leu Cys Leu Leu Leu Val
1 5 10 15
Thr Val Ser Ser Asn Leu Ala Ile Ala Ile Lys Lys Glu Lys Arg Pro
20 25 30
Pro Gln Thr Leu Ser Arg Gly Trp Gly Asp Asp Ile Thr Trp Val Gln
35 40 45
Thr Tyr Glu Glu Gly Leu Phe Tyr Ala Gln Lys Ser Lys Lys Pro Leu
50 55 60
Met Val Ile His His Leu Glu Asp Cys Gln Tyr Ser Gln Ala Leu Lys
65 70 75 80
Lys Val Phe Ala Gln Asn Glu Glu Ile Gln Glu Met Ala Gln Asn Lys
85 90 95
Phe Ile Met Leu Asn Leu Met His Glu Thr Thr Asp Lys Asn Leu Ser
100 105 110
Pro Asp Gly Gln Tyr Val Pro Arg Ile Met Phe Val Asp Pro Ser Leu
115 120 125
Thr Val Arg Ala Asp Ile Ala Gly Arg Tyr Ser Asn Arg Leu Tyr Thr
130 135 140
Tyr Glu Pro Arg Asp Leu Pro Leu Leu Ile Glu Asn Met Lys Lys Ala
145 150 155 160
Leu Arg Leu Ile Gln Ser Glu Leu
165

<210> 632
<211> 402
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(402)
<223> n = A,T,C or G

<400> 632
gcccggacgt aggtagtttg ttgggccggg ttctgaggcc ttgcttctct ttacttttcc 60
actctaggcc acgatgccgc agtaccagac ctgggaggag ttcagccgcg ctgccgagaa 120
gctttacctc gctgacccta tgaaggcacg tgtggttctc aaatataggc attctgatgg 180
gaacttgtgt gttaaagtaa cagatgattt agtttgtttg gtgtataaaa cagaccaagc 240
tcaagatgta aagaaaattg agaaattcca cagtcaacta atgcnactta tggtacccaa 300
ggaagcccgc aatgttacca tggaaactga gtgaatggtt tgaaatgaaa ctttgtcgtg 360
tacttaggaa gtaaatatct tttgaattan aaaaagtgtt gg 402

<210> 633
<211> 402
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(402)
<223> n = A,T,C or G

<400> 633
gcggagtcgg gtgggttggc ggctataaag ctggtagcga aggggaggcg ccgcggactg 60
tcctttcgtg gctcactccc tttcctctgc tgccgctcgg tcacgcttgc tctttcacca 120
tgcctggatc acttcctttg aatgcagaag cttgctggcc aaaagatgtg ggaattgttg 180
cccttgagat ctattttcct tctcaatatg ttgatcaagc agagttggaa aaatatgatg 240
gtgtagatgc tggaaagtat accattggct tgggccangc caagatgggc ttctgcacag 300
atagagaaga tattaactct ctttgcatga ctgtggttca gaatcttatg gagagaaata 360
acctttccta tgattgcatt gggcggntgg aagttggaac ag 402

<210> 634
<211> 386
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(386)
<223> n = A,T,C or G

<400> 634
tgcaggtcga cactagtgga tccaaanaat tcggcacgag gctggcaaga agagacgagg 60
cccggctgtg gagcaactga accgggtgac tgtcccaagc tggactccct ggtggcccag 120
cagctgcaga gcaagaatga gtgtggaatc cttgccgacc ccaaggggcc cttccgggag 180
tgccatagca agctggaccc ccagggtgcc gtgcgcgact gtgtctatga ccgctgcctg 240
ctgccaggcc agtctgggcc actgtgtgac gcactggcca cctatgctgc tgcatgccag 300
gctgctggag ccacagtgca cccctggagg agtgaagaac tttgcccact tganctgcca 360
ccncacannc ctatnaggcg tgttct 386

<210> 635
<211> 404
<212> DNA
<213> Homo sapien

<400> 635
gccaccactt cgtagtgttt tggaacaaac caagttaaag aaagaagata tttatgcagt 60
ggagatagtt ggtggtgcta cacgaatccc tgcggtaaaa gagaagatca gcaaattttt 120
cggtaaagaa cttagtacaa cattaaatgc tgatgaagct gtcactcgag gctgtgcatt 180
gcagtgtgcc atcttatcgc ctgctttcaa agtcagagaa ttttctatca ctgatgtagt 240
accatatcca atatctctga gatggaattc tccagctgaa gaagggtcaa gtgactgtga 300
agtcttttcc aaaaatcatg ctgctccttt ctctaaagtt cttacatttt atagaaagga 360
acctttcact cttgaggcct actacagctc tcctcaggat ttgc 404

<210> 636
<211> 403
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

<400> 636
gctcactggt ccccagtgcc ctgctggagc aagcctatgc tgtgcagatg gacttcaacc 60
tgctagtgga tgctgtcagc cagaacgctg ccttcctgga gcaaactctt tccagcacca 120
tcaaacagga tgactttacc gctcgtctct ttgacatcca caagcaagtc ctaaaagagg 180
gcattgccca gactgtgttc ctgggcctga atcgctcaga ctacatgttc cagcgcagcg 240

cagatggctc cccagccctg aaacagatcg aaatcaacac catctctgcc agctttgggg 300
gcctggcctc ccggacccca nctgtgcacc gacatgttct cagtgtcctg agtaagacca 360
aagaagctgg caagatcctc tctaataatc ccagcaaggg act 403

<210> 637
<211> 441
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(441)
<223> n = A,T,C or G

<400> 637
aggtcgacac tagtggatcc aaanaattcg gcacgaggag agagacccta aaagcaaaaa 60
tagaagggat gacccaaagt ctgagaggtc tggaattaga tgttgttact ataaggtcag 120
aaaaagaaaa tctgacaaat gaattacaaa aagagcaaga gcgaatatct gaattagaaa 180
taataaattc atcatttgaa aatattttgc aagaaaaaga gcaagagaaa gtacagatga 240
aagaaaaatc aagcactgcc atggagatgc ttcaaacaca attaaaagag ctcaatgaga 300
gagtggcagc cctgcataat gaccaagaag cctgtaaggc caaagagcag aatcttagta 360
gtcaagtaga gtgtcttgaa cttgagaagg ctcagttgct acaaggcctt gatgaggcca 420
aaaataatta tattgtttgc a 441

<210> 638
<211> 404
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(404)
<223> n = A,T,C or G

<400> 638
gcgctgccgc cgattccgga tctcattgcc acgcgccccc gacgaccgcc cgacgtgcat 60
tcccgattcc ttttggttcc aagtccaata tggcaactct aaaggatcag ctgatttata 120
atcttctaaa ggaagaacag accccccaga ataagattac agttgttggg gttggtgctg 180
ttggcatggc ctgtgccatc agtatcttaa tgaaggactt ggcagatgaa cttgctcttg 240
ttgatgtcat cgaagacaaa ttgaagggag agatgatgga tctccaacat ggcagccttt 300
tcttagaaca ccaaagattg tctntggcaa agactataat gtaactgcaa ctncagctgg 360
cattatcacg ntggggacgt cagaagaagg agaaagccgc ttat 404

<210> 639
<211> 404
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(404)
<223> n = A,T,C or G

<400> 639
gcatgtaccg agcacttcgg ctcctcgcgc gctcgcgtcc cctcgtgcgg gctccagccg 60
cagccttagc ttcggctccc ggcttgggtg gcgcggccgt gccctcgttt tggcctccga 120
acgcggctcg aatggcaagc caaaattcct tccggataga atatgatacc tttggtgaac 180
taaaggtgcc aaatgataag tattatggcg cccagaccgt gagatctacg atgaacttta 240

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agattggagg tgtgacagaa cgcatgccaa ccccagttat taaagctttt ggcatcttga     300
aacgagcggc cgctgaagta aaccaggatt atggtcttga tccaaaaatt gctaatgcaa     360
taatgaangc agcanatgaa gnanctgaag gtaaataaaa tgat                      404

      <210> 640
      <211> 401
      <212> DNA
      <213> Homo sapien

      <400> 640
ggccaagtca gcttcttctg agagagtctc tagaagacat gatgctacac tcagctttgg      60
gtctctgcct cttactcgtc acagtttctt ccaaccttgc cattgcaata aaaaaggaaa     120
agaggcctcc tcagacactc tcaagaggat ggggagatga catcacttgg gtacaaactt     180
atgaagaagg tctcttttat gctcaaaaaa gtaagaagcc attaatggtt attcatcacc     240
tggaggattg tcaatactct caagcactaa agaaagtatt tgcccaaaat gaagaaatac     300
aagaaatggc tcagaataag ttcatcatgc taaaccttat gcatgaaacc actgataaga     360
atttatcacc tgatgggcaa tatgtgccta gaatcatgtt t                         401

      <210> 641
      <211> 404
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(404)
      <223> n = A,T,C or G

      <400> 641
ggctcatcgc agacaccagc cgacctaccg gctttcggac catggccaac ctcgagcgta      60
ccttcattgc catcaagcca gatggcgtgc agcgcggcct ggtgggcgag atcatcaaac     120
gattcgagca gaaggggttc cgctggtggc catgaagttc cttcgggctn ttgaagaaca     180
cctgaacagc attacatcga ccctgaacga accgtccttt ctttccnggg gctggtgaaa     240
tacatgaact tnggggccat ngtgggcatg ggcttgggaa ggggntcaat ggtggtggaa     300
aaccggcccg aatgattctt ggggggaana acaaatccaa nttgatttaa aaaccaggca     360
nccattnccg gggggatttt tnttgnnttt naaanttggg nagg                      404

      <210> 642
      <211> 366
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(366)
      <223> n = A,T,C or G

      <400> 642
tgcaggtcga cactagtgga tccaantaat tcggcacgag gagcaaaggc acatcttaaa      60
tggcagggga actacccttg atacaaccat cagatctcat gagactcact gtcatgagaa     120
cagcagcatg ggggtaacgg ccccatgatt caattacctc ccactgagtc cctcccacga     180
catatgggga ttatgggagc tacaattcaa gatgagattt aggtggggac acagccaaac     240
catttcaata gcataacacc aaaaaaggtt atagagcagt aaaagggttg atggaccatg     300
catcagtaat aataataata attataagtg atctttaaac attcatcagg tgccaagcct     360
cgtgcc                                                                366

      <210> 643
      <211> 403
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<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

<400> 643
gtgacctgat gagacagtta attatggcca atccacaaat gcagcagttg atacagagaa 60
atccagaaat tagtcatatg ttgaataatc cagatataat gagacaaacg ttggaacttg 120
ccaggaatcc acaatgatgc agganaagat gaagaaccaa gacccaactt tnancaacct 180
aaaaannntt ccnaggggnn ttnanngttt nanggncntt ntccccaant tttnagganc 240
cattgttnat ngntgnncaa aannagttng gnggaaatcc ttttgtttcc ttgggganca 300
atacatcctt tggngaaggt agtcaacctt cccgtncana aattagaaat cccctnccca 360
atccntgggn tccacaaact tcccaaagtt antnagtttc cac 403

<210> 644
<211> 403
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

<400> 644
ggggatgaca gccctaacaa gaactgtttt tgaatcgttg tgcagctcca ggcaatagag 60
tatgtgaagc gatttcagta gaatcactta ctcatcctaa aagaaaacat tattccnant 120
accntccttn nnattnccnt nttntaannn aaacntanng ntnnntgnnt gttnannggn 180
atnancttta aanntgcant ntnntttant cctccaaatn tttttcggtt tcntntgaga 240
ancaccanaa nctttctttc ccttntcttc agtanttgca anagganacc tccnttnagg 300
actggcntag ngaacgtaat ccatgcttta actgccatta aacagcccca tggttggatt 360
ttttttttt ttngagtngg ctttccaaaa ccttgtcaaa aac 403

<210> 645
<211> 405
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(405)
<223> n = A,T,C or G

<400> 645
gcgccttcca ggccgcactc cagagccaaa agagctccat ggcggcggcg gccaagccca 60
acaacctttc cctggtggtg cacggaccgg gggacttgcg cctggagaac tatcctatcc 120
ctgaaccagg cccaaatgag gtcttgctga ggatgcattc tgttggaatc ttgtggctta 180
aatgtcacta ctgggagtat gggcnaattg ggaattttat tgngaaaaac ccatggggtt 240
ggacatgaag ttcggacagt cnaaaaagtg ggatcatcgg naaagaccta aaaccaggtg 300
atcggttgca tcacctgggc tcccgaaaaa tgataattnt gaagatggcc atacatntgt 360
accttcatnt tttntggcac ccccccnata cggaactttg cggtt 405

<210> 646
<211> 412
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(412)
<223> n = A,T,C or G

<400> 646
ggaacccagt gcctgcagcc atggctcccg gccagctcgc cttatttagt gtctctgaca 60
aaaccggcct tgtggaattt gcaagaaacc tgaccgctct tggtttgaat ctggtcgctt 120
ccggagggac tgcaaaagct ctcagggatg ctggtctggc agtcagagat gtctctgagt 180
tgacgggatt tcctgaaatg ttggggggac gtgtgaaaac tttgcatcct gcagtccatg 240
ctggaatcct agctcgtaat attccagaag ataatgctga catggccaga cttgatttca 300
atcttataag agttgttgcc tgcaatctct atccctttgt aaagacaagt ggcttctcca 360
ggtgtaactg ttgaggangc tgtgggagca aattgacatt ggtgggagta ac 412

<210> 647
<211> 412
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(412)
<223> n = A,T,C or G

<400> 647
ggtcgcccgg cgccccagcc cggccgcggc gctccccgcc tccccgctag cgcanncggc 60
ngntctgntc ggctgattnc cagctatgan acaaggagaa tgaaaatatg aagaaaaagc 120
tgaacaaaaa agttanntag ctaaaacagg acttgcagnn ttnaaaacag gtccttgatg 180
gcaaagaaga ggttgagaaa caacntagag aaaatattna aantctaaat tccatggtag 240
aacgccaaga gaaagatctt ggccgtcttc aggtagacat ggatgaactt gaagaaaaga 300
accgaagtat tcangctgcc tggatagtgc atacaaagaa cttactgatc tttacaaagc 360
caatgctgca aangatagtg aggnacanga agctgctctn accgtgaaat ga 412

<210> 648
<211> 413
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(413)
<223> n = A,T,C or G

<400> 648
ggtcgcccgg cgccccagcc cggccgcggc gctccccgcc tccccgctag cgcagcccgg 60
cggctctgcc cggctgccgc ccggcatgaa catcatggat ttcaacgtga agaaacttgg 120
cgggccgacc gggcaccttt tcttaagccg gcccgtgnaa tttanaaaaa aaaaacttgg 180
ncaagcaaaa aaaaanaaaa ttggncctta ncttgaaaan cttcttaaca aaacttaatg 240
gtccaaaata ttgaccgaaa aaaaaatgna ncaaaccnna ntgnttttgc acccaatncn 300
aatnccnnga nnaaaaaaat tgnttattaa aaacntgaat aaaaancccc aannctatna 360
acaaccccga actttttgga cnatntntna ntgatnnnng aacntaattt ggc 413

<210> 649
<211> 409
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(409)
<223> n = A,T,C or G

<400> 649
actagtggat ccaaagantt cggcacgagg gcanggtgtn cgggcgggaa ggggcacggg 60
cacccccgcg gtcctcggga ggctagagat catggaaggg aagtggttgc tgtgtatgtt 120
actggtgctt ggaactgcta ttgttgaggc tcatgatgga catgatgatg atgtgattga 180
tattgaggat gaccttgacg atgtcattga agaggtagaa gactcaaaac cagataccac 240
tgctcctcct tcatctccca aggttactta caaagctcca nttccaacag gggaagtata 300
ttttgctgat tcttttgaca gaggaactct gtcagggtgg attttatnca nagccaanaa 360
agacnatccn atgatgaaaa ttgccnaata tnatggaaaa gtgggaggt 409

<210> 650
<211> 413
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(413)
<223> n = A,T,C or G

<400> 650
ggcctgagga ccggcaacat ggtgcggtcg gggaataagg cagctgttgt gctgtgtatg 60
gacgtgggct ttaccatgag taactccatt cctggtatag aatcccccatt tgaacaagca 120
aagaaggtga taaccatgtt tgtacagcga caggtgtttg ctgagaacaa ggatgagatt 180
gctttagtcc tgtttggtac agatggcact gacaatcccc tttctggtgg ggatcagtat 240
cagaacatca cagtgcacag acatctgatg ctaccagatt ttgatttgct ggaggacatt 300
gaaagcaaaa tccaaccagg ttctcaacag gctgacttcc tggatgcact aatcgtgagc 360
atggatgtga ttcacatgaa acaataggaa agaagtttga gaanaagcat att 413

<210> 651
<211> 441
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(441)
<223> n = A,T,C or G

<400> 651
ctagtggatc caaaganttc ggcacgaggc aaccagtgac actgcaggga gaaatgctct 60
tcacctggct gctaagtatg gacatgcatt gtgcctacaa aaacttctac agtacaattg 120
tcccactgag catgcagacc tgcagggaag aactgcactt cacgatgccg caatggcaga 180
ttgtccttct agcatacagc tgctttgtga ccatggggcc tctgtgaatg ccaaagatgt 240
agacgggcgg acaccacttg ttctggctac tcagatgagt aggccaacaa tgtgtcaact 300
gctgatagat agaggagcgg atgttaattc cagagacaaa caaaacagaa ctgccctcat 360
gctaggttgc gaatatggtt gcagagatgc agtagaagtc ttaattaaaa atgggtgctg 420
atataagctt gctggatgcg c 441

<210> 652
<211> 412
<212> DNA
<213> Homo sapien

<400> 652
gcttctctct cctgtgcaaa atggcaactc ttaaggaaaa actcattgca ccagttgcgg 60
aagaagaggc aacagttcca aacaataaga tcactgtagt gggtgttgga caagttggta 120
tggcgtgtgc tatcagcatt ctgggaaagt ctctggctga tgaacttgct cttgtggatg 180
ttttggaaga taagcttaaa ggagaaatga tggatctgca gcatgggagc ttatttcttc 240
agacacctaa aattgtggca gataaagatt attctgtgac cgccaattct aagattgtag 300
tggtaactgc aggagtcccg tcagcaagaa ggggagagtc ggctcaatct ggtgcagaga 360
aatggtaatg tcttcaaatt cattattcct cagatccgca agtacagtcc tg 412

<210> 653
<211> 414
<212> DNA
<213> Homo sapien

<400> 653
gccagttcaa gtccaccctg ccggacgccg atagggagcg cgaggccatc ctggccatcc 60
acaaggaggc ccagaggatc gctgagagca accacatcaa gctgtcgggc agcaacccct 120
acaccaccgt caccccgcaa atcatcaact ccaagtggga gaaggtgcag cagctggtgc 180
caaaacggga ccatgccctc ctggaggagc agagcaagca gcagtccaac gagcacctgc 240
gccgccagtt cgccagccag gccaatgttg tggggccctg gatccagacc aagatggagg 300
agatcgggcg catctccatt gagatgaacg ggaccctgga ggaccagctg agccacctga 360
agcagtatga acgcagcatc gtggactaca aagcccaacc tggaccttgt tgga 414

<210> 654
<211> 404
<212> DNA
<213> Homo sapien

<400> 654
gcatggcgga gctgacggtg gaggttcgcg gctccaacgg ggctttctac aagggattta 60
tcaaagatgt ccacgaagac tccctcacag ttgtttttga aaataattgg caaccagaac 120
gccaggttcc gtttaatgaa gtgcgattac caccaccacc tgatataaaa aaagaaatta 180
gtgaaggaga tgaagtagag gtatattcaa gagcaaatga ccaagagcca tgtggatggt 240
ggctggctaa agttcggatg atgaaaggcg agttttatgt cattgaatat gctgcttgtg 300
atgccactta caatgaaata gtcacatttg aacgacttcg gcctgtcaat caaaataaaa 360
ctgtcaaaaa aaataccttc tttaagtgca cagtggatgt tcct 404

<210> 655
<211> 402
<212> DNA
<213> Homo sapien

<400> 655
gggcaagatc accattagca aatggaaatt acatttgaaa gccattagac ttataggtga 60
tgcaagcatc taagagagag gttaatcaca ctatagaggc ataagtggta tcagttttca 120
tttttctaat tgtttaaact gtgttttata ccagtgtttg caagtaattg ggtgttagct 180
tgagatggtt aaaggtggtt tggggaggga cttcgttgta atggttttgc tgtaaaaaat 240
gtttccaact ccgctgaaat gttgctgaaa agcatggtgc tggtaacagt tcaacaatcc 300
gtggctgctc attcttgcct actttactct cccactgaag caggttagcg tttgaaggtg 360
gtatggaaaa cctgcatgcc tgttcaattc ttttgtttct tc 402

<210> 656
<211> 416
<212> DNA
<213> Homo sapien

<400> 656

```
gaatcggcac gaggtcagcc gcgaggtgtc cggcatcaag gccgcctacg aggccgagct      60
cggggatgcc cgcaagaccc ttgactcagt agccaaggag cgcgcccgcc tgcagctgga     120
gctgagcaaa gtgcgtgagg agtttaagga gctgaaagcg cgcaatacca agaaggaggg     180
tgacctgata gctgctcagg ctcggctgaa ggacctggag gctctgctga actccaagga     240
ggccgcactg agcactgctc tcagtgagaa gcgcacgctg gagggcgagc tgcatgatct     300
gcggggccag gtggccaagc ttgaggcagc cctaggtgag gccaagaagc aacttcagga     360
tgagatgctg cggcgggtgg atgctgagaa caggctgcag accatgaagg aggaac         416
```

<210> 657
<211> 402
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(402)
<223> n = A,T,C or G

<400> 657

```
gctccaagca gacacaatgg taagaatggt gcctgtcctg ctgtctctgc tgctgcttct      60
gggtcctgct gtcccccagg agaaccaaga tggtcgttac tctctgacct atatctacac     120
tgggctgtcc aagcatgttg aagacgtccn cgnntttcag gcccttggct cactcaatga     180
cctccagttc tttagataca acagtaaaga caggaagtct cagcccatgg gactctggag     240
acaggtggaa ggaatggagg attggaagca ggacagccaa cttcagaagg ccagggagga     300
catctttatg gagaccctga aagacattgt ggagtattac aacgacagta acgggtctca     360
cgtattgcag ggaaggtttg gtttgtgaga tcgagaataa ca                        402
```

<210> 658
<211> 404
<212> DNA
<213> Homo sapien

<400> 658

```
gcaagacgcc acttccccta tcatagaaga gcttatcacc tttcatgatc acgccctcat      60
aatcattttc cttatctgct tcctagtcct gtatgccctt ttcctaacac tcacaacaaa     120
actaactaat actaacatct cagacgctca ggaaatagaa accgttgaac tatcctgccc     180
gccatcatcc tagtcctcat cgccctccca tccctacgca tcctttacat aacagacgag     240
gtcaacgatc cctcccttac catcaaatca attggccacc aatggtactg aacctacgag     300
tacaccgact acggcggact aatcttcaac tcctacatac ttcccccatt attcctagaa     360
ccaaggcgga cctgcgactc cttgacgttg acaatcgagt agta                      404
```

<210> 659
<211> 411
<212> DNA
<213> Homo sapien

<400> 659

```
ggcacgaggg tcgccgttac tccgaggaga taccagtcgg tagaggagaa gtcgaggtta      60
gagggaactg ggaggcactt tgctgtctgc aatcgaagtt gagggtgcaa aaatgcagag     120
taataaaact tttaacttgg agaagcaaaa ccatctccaa gaaaagcatc atcaacatca     180
ccaccagcag cagcaccacc agcagcaaca gcagcagccg ccaccaccgc caatacctgc     240
aaatgggcaa caggccagca gccaaaatga aggcttgact attgacctga agaattttag     300
aaaaaccagga gagaagacct tcacccaacg aagccgtctt tttgtgggaa atcttcctcc    360
cgacatcact gaggaagaaa tgaggaaact atttgagaaa tatggaaagg c              411
```

<210> 660
<211> 412
<212> DNA

<213> Homo sapien

<400> 660
ggcacgaggg ggatttgggt cgcagttctt gtttgtggat cgctgtgatc gtcacttaac 60
aatgcagatc ttcgtgaaga ctctgactgg taagaccatc accctcgagg ttgagcccag 120
tgacaccatc gagaatgtca aggcaaagat ccaagataag gaaggcatcc ctcctgacca 180
gcagaggctg atctttgctg gaaaacagct ggaagatggg cgcaccctgt ctgactacaa 240
catccagaaa gagtccaccc tgcacctggt gctccgtctc agaggtggga tgcaaatctt 300
cgtgaagaca ctcactggca agaccatcac ccttgaggtc gagcccagtg acaccatcga 360
gaacgtcaaa gcaaagatcc aggacaagga aggcattcct cctgaccagc ag 412

<210> 661
<211> 411
<212> DNA
<213> Homo sapien

<400> 661
ggcacgaggg gagatcgatg atcttgccag taatgtagag acagtgtcta aggccaaggg 60
aaacctcgag aagatgtgcc gcaccctgga ggaccaggtg agtgagctga agtcaaagga 120
ggaggaacag cagcgactga tcaacgacct gacaacccag agaggacgac tgcagaccga 180
atccggtgaa ttttccaggc agcttgatga gaaggaagcg ctggtatctc agttatcaag 240
gggcaaacag gcattcactc aacagattga ggagctaaag aggcaacttg aagaggaagt 300
aaaggccaag aacgcgctgg cccacgccct gcagtcctcc cgccatgact gtgacctgct 360
gcgggaacag tacgaggagg agcaggagtc taaggctgaa ctgcagaggg c 411

<210> 662
<211> 414
<212> DNA
<213> Homo sapien

<400> 662
ggcacgaggc tcacaggacc agccactagc gcagcctcga gcgatggcct atgtccccgc 60
accgggctac cagcccacct acaacccgac gctgccttac taccagccca tcccgggcgg 120
gctcaacgtg ggaatgtctg tttacatcca aggagtggcc agcgagcaca tgaagcggtt 180
cttcgtgaac tttgtggttg ggcaggatcc gggctcagac gtcgccttcc acttcaatcc 240
gcggtttgac ggctgggaca aggtggtctt caacacgttg cagggcggga agtggggcag 300
cgaggagagg aagaggagca tgcccttcaa aaagggtgcc gcctttgagc tggtcttcat 360
agtcctggct gagcactaca aggtggtggt aaatggaaat cccttctatg agta 414

<210> 663
<211> 414
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(414)
<223> n = A,T,C or G

<400> 663
gcggcgctcc ttcctcctcg gctcgcgtct cactcagtgt accttctagt cccgccatgg 60
ccgctctcac ccgggacccc cagttccaga agctgcagca atggtaccgc gagcaccgct 120
ccgagctgaa cctgcgccgn ctcttcgatg ccaacaagga ccgcttnaac cacttcagct 180
tgaccctcaa caccaaccat gggcatatcc tggnggatta ctccaagaac ctggtgacgg 240
aggacgtgat gcggatgctg gtggacttgg ccaagtccag gggcgtggag gccgaccggg 300
agcggatgtt caatggtgan aagatcaact acacccgang gtcgagccgt gctgcacgtg 360
gctctgcgga accggttcaa acacacccat nctgggagac ggcaangatg tgat 414

<210> 664
<211> 411
<212> DNA
<213> Homo sapien

<400> 664
ggcacgaggc ttagatgccg tgccatgctc cacaaccatc aacaggaacc gcatgggccg 60
agacaagaag agaaccttcc ccctttgctt tgatgaccat gacccagctg tgatccatga 120
gaacgcatct cagcccgagg tgctggtccc catccgctgg acatggagat cgatgggcag 180
aagctgcgag acgccttcac ctggaacatg aatgagaagt tgatgacgcc tgagatgttt 240
tcagaaatcc tctgtgacga tctggatttg aacccgctga cgtttgtgcc agccatcgcc 300
tctgccatca gacagcagat cgagtcctac cccacggaca gcatcctgga ggaccagtca 360
gaccagcgcg tcatcatcaa gctgaacatc catgtgggaa acatttccct g 411

<210> 665
<211> 409
<212> DNA
<213> Homo sapien

<400> 665
ggcacgaggg cgaatcgcag cttctgagac cagggttgct ccgtccgtgc tccgcctcgc 60
catgacttcc tacagctatc gccagtcgtc ggccacgtcg tccttcggag gcctgggcgg 120
cggctccgtg cgttttgggc cgggggtcgc ttttcgcgcg cccagcattc acgggggctc 180
cggcggccgc ggcgtatccg tgtcctccgc ccgctttgtg tcctcgtcct cctcgggggg 240
ctacggcggc ggctacggcg gcgtcctgac cgcgtccgac gggctgctgg cgggcaacga 300
gaagctaacc atgcagaacc tcaacgaccg cctggcctcc tacctggaca aggtgcgcgc 360
cctggaggcg gccaacggcg agctagaggt gaagatccgc gactggtac 409

<210> 666
<211> 411
<212> DNA
<213> Homo sapien

<400> 666
ggcacgaggt gagctgaacc aagaaggagg agggggtcgg gcctccgagg aaggcctagc 60
tgctgctgct gccaggaatt ccaggttgga ggggcggcaa cctcctgcca gccttcaggc 120
cactctcctg tgcctgccag aagagacaga gcttgaggag agcttgagga gagcaggaaa 180
gcagcctccc ccgttgcccc tctggatcca ctgcttaaat acggacgagg acagggccct 240
gtctcctcag cttcaggcac caccactgac ctgggacagt gaatcgacaa tgccgtcttc 300
tgtctcgtgg ggcatcctcc tgctggcagg cctgtgctgc ctggtccctg tctccctggc 360
tgaggatccc cagggagatg ctgcccagaa gacagataca tcccaccatg a 411

<210> 667
<211> 412
<212> DNA
<213> Homo sapien

<400> 667
ggcacgagga ttatccagaa ccttgagaaa gacagacaaa aattggtcag cagccaggag 60
caagacagag aacagttaat tcagaagctt aattgtgaaa aagatgaagc tattcagact 120
gccctaaaag aatttaaatt ggagagagaa gttgttgaga aagagttatt agaaaaagtt 180
aaacatcttg agaatcaaat agcaaaaagt cctgccattg actctaccag aggagattct 240
tcaagcttag ttgctgaact tcaagaaaag cttcaggaag aaaaagctaa gtttctagaa 300
caacttgaag agcaagaaaa aagaaagaat gaagaaatgc aaaatgttcg aacatctttg 360
attgcggaac aacagaccaa ttttaacact gttttaacaa gagagaaaat ga 412

<210> 668
<211> 411

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(411)
<223> n = A,T,C or G

<400> 668
```
ggcacgaggg tctngggcgc gctcananna gatnatcaac ctgcgagagg tcagcaccng     60
cttccncctg ncacccgggg agtannnntt aattgtgaan aagatgaaag ctattcagac    120
ttgncctnnn ataatttnaa ttggngagga gaanntnttn tnatcaaaag ttnttttana    180
aaaagntann ncatcttnnn ntaatnaaag tattacanna ntnactgccn attgacttta    240
ccanaagaga angcttcnng gctttgttgc tgaancttaa tnaaaaggnt atggggantn    300
nanaaaannt aanttnnntn ganntaatct ttgnttgcag cttatcatnn ttngntatna    360
aannaganaa tanttctaat nnntgttttc gaatctatna tnnctnnttt t             411
```

<210> 669
<211> 412
<212> DNA
<213> Homo sapien

<400> 669
```
ggcacgaggg cagagaaacc agattctctc tcagcagtta cagcagatgg aagctgagca     60
taatactttg aggaacactg tggaaacaga aagagaggag tccaagattc tactggaaaa    120
gatggaactt gaagtggcag agagaaaatt atccttccat aatctgcagg aagaaatgca    180
tcatctttta gaacagtttg agcaagcagg ccaagcccag gctgaactag agtctcggta    240
tagtgctttg gagcagaagc acaaagcaga aatggaagag aagacctctc atattttgag    300
tcttcaaaag actggacaag agctgcagtc tgcctgtgat gctctaaagg atcaaaattc    360
aaagcttctc caagataaga atgaacaggc agttcagtca gcccagacca tt            412
```

<210> 670
<211> 411
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(411)
<223> n = A,T,C or G

<400> 670
```
ggcacgagga gagggacttc cagagaagct ggttataaaa aaccagcaat ttcacaagga     60
acgagagcag ccacccagat ttgcacagcc tggctccttt gagtatgaat atgccatgcg    120
ctggaaggca ctcattgaga tggagaagca gcancaggac caagtggacc gcaacatcaa    180
ggaggctcgt gagaagctgg agatggagat ggaagctgca cgccatgagc accaggtcat    240
gctaatgaga caggatttga tgaggcgcca agaagaactt cggaggatgg aagagctgca    300
caaccaagag gtgcaaaaac gaaagcaact ggagctcagg caggaggaag ancgcaggcg    360
ccgtgaagaa ganatgcggc ggcagcaaga agaaatgatg cggcgacagc a             411
```

<210> 671
<211> 411
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(411)

<223> n = A,T,C or G

<400> 671
ggcacgaggg caacatccag cctcctgaca aggtgatccg ggcgggcccc gcaggaattt 60
tatcccctca ccggcctcac actagtatcg catgtccact atccagaacc tccaatcttt 120
cgaccccttt gctgatgcaa ctaagggtga cgacttactn ccggcaggga ctgaggatta 180
cattcatata agaatccagc aacggaacgg cagaaagaca ctgactactg ttcagggcat 240
tgcagatgat tatgacaaaa agaaacttgt gaaagctttc aaaaagaaat ttgcctgtaa 300
tggtactgtg attgaacatc ctgaatacgg agaggttatt cagcttcaag gtgaccaaag 360
aaaaaacatc tgccagtttc tcttggaggt tggcattgta aaggaggaac a 411

<210> 672
<211> 409
<212> DNA
<213> Homo sapien

<400> 672
ggcacgaggc ccactccacc ttactaccag acaaccttag ccaaaccatt tacccaaata 60
aagtataggc gatagaaatt gaaacctggc gcaatagata tagtaccgca agggaaagat 120
gaaaaattat aaccaagcat aatatagcaa ggactaaccc ctataccttc tgcataatga 180
attaactaga aataactttg caaggagagc caaagctaag acccccgaaa ccagacgagc 240
tacctaagaa cagctaaaag agcacacccg tctatgtagc aaaatagtgg gaagatttat 300
aggtagaggc gacaaaccta ccgagcctgg tgatagctgg ttgtccaaga tagaatctta 360
gttcaacttt aaatttgccc acagaaccct ctaaatcccc ttgtaaatt 409

<210> 673
<211> 412
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(412)
<223> n = A,T,C or G

<400> 673
ggcacgaggg gaaaanctgg gccccntctn cacagccgac caanggcagc gggctctgcc 60
cggcgccgct ttctgcgacc tggccgtcag ccccacgtcg ccggcctgga ggggcaaaga 120
ggacgagggg gccgcggctt cctccgggga ccttggcttg cctggattgc caggagctgg 180
aagttgacat tgagtctagg ctgaggatgg aaggtgtgga gctgaaggaa gaatggcagg 240
atgaagattt tccaatacct ttaccagaag atgacagcat tgaagcagat acactagatg 300
gaactgatcc agacagacag cctggctcct tagaagttaa tgggaacaaa gtaaggaaga 360
aactgatggc cccagacatc agcctgaccc tggatcctgg tgaagactct ct 412

<210> 674
<211> 413
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(413)
<223> n = A,T,C or G

<400> 674
gcacagcctc acttctaacc ttctggaacc cacccaccac tgccaagctc actattgaat 60
ccacgccgtt caatgtcgca gaggggaagg aggttcttct actcgcccac aacctgcccc 120
agaatcgtat tggttacagc tggtacaaag gcgaaagagt ggatggcaac agtctaattg 180

taggatatgt aataggaact caacaagcta ccccagggcc cgcatacagt ggtcgagaga 240
caatataccc caatgcatcc ctgctgatcc agaacgtcac ccagaatgac acaggattct 300
ataccctaca agtcataaag tcagatcttg tgaatgaaga agcaaccgga cagttccatg 360
tatacccgga gctgcccaag ccctccatct ncagcaacaa ctccaacccc gtg 413

<210> 675
<211> 411
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(411)
<223> n = A,T,C or G

<400> 675
ggcacgaggt attgttgctc cagacacagt gatccactgt gagggggagc caatcaagcg 60
agaggatgag gaggaatcct tgaatgaagt aggctatgat gacatcggtg gttgcaggaa 120
gcagctagct caaataaagg agatggtgga gctgccactg agacatnctg cgctctttaa 180
ggngattggt gtaaagcctc ctcggggaat cttgttgtat gggccttctg ggacagggaa 240
gaccctgatt gctcgagctg tggcaaatga aactggagcc ttcttctttc tgatcaatgg 300
tcctgaaatc attgancaaa ttggctggtg agtctgagag caaccttcgt aaagcctttg 360
aggaagctga aaagaatgct nctgctatca tcttcatcga tgaacttgat g 411

<210> 676
<211> 413
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(413)
<223> n = A,T,C or G

<400> 676
ggcacgaggc gggagcggcg caggcggccg agcgggactg gctgggtcgg ctgggntgct 60
ggtgcgagga gccgcggggc tgtgctcggc ggccaagggg acagcgcgtg ggtggccgag 120
gatgctgcgg ggcggtagct ccngcgcccc tccttggtga ctgcttgcgc cgngcctcac 180
acagccgaag gcgggctcgg cgcacagtcn gctgctccgc gctcgcgccc ggcggcgctc 240
caggtgctga cagcgcgaga gagcgcnggn cctcaggagc aaggcgaatg tatgacaaca 300
tgtccacaat ggtgtacata aaggaagaca agttggagaa gcttacacan gatgaaatta 360
ttttctaaga caaaagcnag taaattcang gggcctggga aagctttgaa gaa 413

<210> 677
<211> 410
<212> DNA
<213> Homo sapien

<400> 677
ggcacgaggg ccaagtcagc ttcttctgag agagtctcta gaagacatga tgctacactc 60
agctttgggt ctctgcctct tactcgtcac agtttcttcc aaccttgcca ttgcaataaa 120
aaaggaaaag aggcctcctc agacactctc aagaggatgg gggagatgac atcacttggg 180
tacaaactta tgaagaaggt ctcttttatg ctcaaaaaag taagaagcca ttaatggtta 240
ttcatcacct ggaggattgt caatactctc aagcactaaa gaaagtattt gcccaaaatg 300
aagaaataca agaaatggct cagaataagt tcatcatgct aaaccttatg catgaaacca 360
ctgataagaa tttatcacct gatgggcaat atgtgcctag aatcatgttt 410

<210> 678

<211> 410
<212> DNA
<213> Homo sapien

<400> 678
ggcacgagga attaatgaag tctttaatga acttatatta gatgtgttaa agcagggtta 60
catgatgaaa aagggccaca gacggaaaaa ctggactgaa agatggtttg tactaaaacc 120
caacataatt tcttactatg tgagtgagga tctgaaagga taagaaagga gacattctct 180
tggatgaaaa ttgctgtgta gagtccttgc ctgacaaaga tggaaagaaa tgccttttc 240
tcgtaaaatg ttttgataag acttttgaaa tcagtgcttc agataagaag aagaaacagg 300
agtggattca agccattcat tctactattc atctgttgaa gctgggcagc cctccaccac 360
acaaagaagc ccgccagcgt cggaaagaac tccggaagaa gcagctggct 410

<210> 679
<211> 410
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(410)
<223> n = A,T,C or G

<400> 679
ggcacgaggg agagagaata gttcgagttt tttttttttt ttattgcaag catatttctt 60
ttaatgactc cagtaaaatt aagcatcaag taaacaagtg gaaagtgacc tacactttta 120
acttgtctca ctagtgccta aatgtagtaa aggctgctta agttttgtat gtagttggat 180
tttttggagt ccgaaggtat ccatctgcag aaattgatgc ccaaattgaa tttggattca 240
agtggattct aaatactttg cttatcttga agagagaagc ttcataagga ataaacaagt 300
tgaatagaga aaacactgat tgataatagg cattttagtg ggctttttaa tgntttctgc 360
tgtgaaacat ttcaagattt attgattttt ttttttcact ttccccatca 410

<210> 680
<211> 410
<212> DNA
<213> Homo sapien

<400> 680
ggcacgaggc aattctggaa acaatgggaa caatggaaaa gagagagagg actcctggaa 60
aggagcttct gttcagaaat caactgggtc aaaaaatgac tcttgggaca acaataacag 120
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agggaacaaa atgacatctg ggtctctca gggagaatgg aaacagccga ctgggtctga 240
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<212> PRT
<213> Homo sapien

<400> 685

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Asp Gly His Arg Leu Cys Ser Asp Leu Met Asn Cys Leu His Glu Arg
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Ala Arg Ile Glu Lys Ala Tyr Ala Gln Gln Leu Thr Glu Trp Ala Arg
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Arg Trp Arg Gln Leu Val Glu Lys Gly Pro Gln Tyr Gly Thr Val Glu
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Lys Ala Trp Met Ala Phe Met Ser Glu Ala Glu Arg Val Ser Glu Leu
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His Leu Glu Val Lys Ala Ser Leu Met Asn Asp Asp Phe Glu Lys Ile
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Lys Asn Trp Gln Lys Glu Ala Phe His Lys Gln Met Met Gly Gly Phe
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Lys Glu Thr Lys Glu Ala Glu Asp Gly Phe Arg Lys Ala Gln Lys Pro
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Trp Ala Lys Lys Leu Lys Glu Val Glu Ala Ala Lys Lys Ala His His
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Ala Ala Cys Lys Glu Glu Lys Leu Ala Ile Ser Arg Glu Ala Asn Ser
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Glu Lys Ser Leu Lys Glu Leu Asp Gln Gly Thr Pro Gln Tyr Met Glu
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Leu Ser Asn Val Ala Gly Tyr Lys Ala Ile Tyr His Asp Leu Glu Gln
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Ser Ile Arg Ala Ala Asp Ala Val Glu Asp Leu Arg Trp Phe Arg Ala
        275                 280                 285

Asn His Gly Pro Gly Met Ala Met Asn Trp Pro Gln Phe Glu Glu Trp
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Ser Ala Asp Leu Ile Arg Thr Leu Ser Arg Arg Glu Lys Lys Lys Ala
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Thr Asp Gly Phe Thr Leu Thr Gly Ile Asn Gln Thr Gly Asp Gln Phe
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Leu Pro Ser Lys Pro Ser Ser Thr Leu Asn Val Pro Ser Asn Pro Ala
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Gln Ser Ala Gln Ser Gln Ser Ser Tyr Asn Pro Phe Glu Asp Glu Asp
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Asp Thr Gly Ser Thr Val Ser Glu Lys Glu Asp Ile Lys Ala Lys Asn
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Val Ser Ser Tyr Glu Lys Thr Gln Ser Tyr Pro Thr Asp Trp Ser Asp
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Asp Glu Ser Asn Asn Pro Phe Ser Ser Thr Asp Ala Asn Gly Asp Ser
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Asn Pro Phe Asp Asp Asp Ala Thr Ser Gly Thr Glu Val Arg Val Arg
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Ala Leu Tyr Asp Tyr Glu Gly Gln Glu His Asp Glu Leu Ser Phe Lys
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Ala Gly Asp Glu Leu Thr Lys Met Glu Asp Glu Asp Glu Gln Gly Trp
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Cys Lys Gly Arg Leu Asp Asn Gly Gln Val Gly Leu Tyr Pro Ala Asn
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<212> PRT
<213> Homo sapiens

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<210> 691
<211> 2265
<212> DNA
<213> Homo sapiens

<400> 691
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<210> 692
<211> 1210
<212> PRT
<213> Homo sapiens

<400> 692
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20 25 30

Asn Asn Tyr Trp Ile Arg Glu Asn Pro Asn Leu Asn Ser Thr Gln Glu
35 40 45

Val Asn Glu Leu Leu Leu Gly Met Ala Ser Gln Ile Ser Glu Leu Glu
50 55 60

Asp Asn Ile Val Val Glu Asp Leu Arg Asp Tyr Trp Pro Gly Pro Gly
65 70 75 80

Lys Phe Ser Arg Thr Asp Tyr Val Ala Ser Ser Ile Gln Arg Gly Arg
85 90 95

Asp Met Gly Leu Pro Ser Tyr Ser Gln Ala Leu Leu Ala Phe Gly Leu
100 105 110

Asp Ile Pro Arg Asn Trp Ser Asp Leu Asn Pro Asn Val Asp Pro Gln
115 120 125

Val Leu Glu Ala Thr Ala Ala Leu Tyr Asn Gln Asp Leu Ser Gln Leu
130 135 140

Glu Leu Leu Leu Gly Gly Leu Leu Glu Ser His Gly Asp Pro Gly Pro
145 150 155 160

Leu Phe Ser Ala Ile Val Leu Asp Gln Phe Val Arg Leu Arg Asp Gly
165 170 175

Asp Arg Tyr Trp Phe Glu Asn Thr Arg Asn Gly Leu Phe Ser Lys Lys
180 185 190

Glu Ile Glu Asp Ile Arg Asn Thr Thr Leu Arg Asp Val Leu Val Ala
195 200 205

Val Ile Asn Ile Asp Pro Ser Ala Leu Gln Pro Asn Val Phe Val Trp
210 215 220

His Lys Gly Ala Pro Cys Pro Gln Pro Lys Gln Leu Thr Thr Asp Gly
225 230 235 240

Leu Pro Gln Cys Ala Pro Leu Thr Val Leu Asp Phe Phe Glu Gly Ser
245 250 255

Ser Pro Gly Phe Ala Ile Thr Ile Ile Ala Leu Cys Cys Leu Pro Leu
260 265 270

Val Ser Leu Leu Leu Ser Gly Val Val Ala Tyr Phe Arg Gly Arg Glu
275 280 285

His Lys Lys Leu Gln Lys Lys Leu Lys Glu Ser Val Lys Lys Glu Ala
290 295 300

Ala Lys Asp Gly Val Pro Ala Met Glu Trp Pro Gly Pro Lys Glu Arg
305 310 315 320

Ser Ser Pro Ile Ile Ile Gln Leu Leu Ser Asp Arg Cys Leu Gln Val
325 330 335

Leu Asn Arg His Leu Thr Val Leu Arg Val Val Gln Leu Gln Pro Leu

340 345 350

Gln Gln Val Asn Leu Ile Leu Ser Asn Asn Arg Gly Cys Arg Thr Leu
355 360 365

Leu Leu Lys Ile Pro Lys Glu Tyr Asp Leu Val Leu Leu Phe Ser Ser
370 375 380

Glu Glu Glu Arg Gly Ala Phe Val Gln Gln Leu Trp Asp Phe Cys Val
385 390 395 400

Arg Trp Ala Leu Gly Leu His Val Ala Glu Met Ser Glu Lys Glu Leu
405 410 415

Phe Arg Lys Ala Val Thr Lys Gln Gln Arg Glu Arg Ile Leu Glu Ile
420 425 430

Phe Phe Arg His Leu Phe Ala Gln Val Leu Asp Ile Asn Gln Ala Asp
435 440 445

Ala Gly Thr Leu Pro Leu Asp Ser Ser Gln Lys Val Arg Glu Ala Leu
450 455 460

Thr Cys Glu Leu Ser Arg Ala Glu Phe Ala Glu Ser Leu Gly Leu Lys
465 470 475 480

Pro Gln Asp Met Phe Val Glu Ser Met Phe Ser Leu Ala Asp Lys Asp
485 490 495

Gly Asn Gly Tyr Leu Ser Phe Arg Glu Phe Leu Asp Ile Leu Val Val
500 505 510

Phe Met Lys Gly Ser Pro Glu Asp Lys Ser Arg Leu Met Phe Thr Met
515 520 525

Tyr Asp Leu Asp Glu Asn Gly Phe Leu Ser Lys Asp Glu Phe Phe Thr
530 535 540

Met Met Arg Ser Phe Ile Glu Ile Ser Asn Asn Cys Leu Ser Lys Ala
545 550 555 560

Gln Leu Ala Glu Val Val Glu Ser Met Phe Arg Glu Ser Gly Phe Gln
565 570 575

Asp Lys Glu Glu Leu Thr Trp Glu Asp Phe His Phe Met Leu Arg Asp
580 585 590

His Asp Ser Glu Leu Arg Phe Thr Gln Leu Cys Val Lys Gly Gly Gly
595 600 605

Gly Gly Gly Asn Gly Ile Arg Asp Ile Phe Lys Gln Asn Ile Ser Cys
610 615 620

Arg Val Ser Phe Ile Thr Arg Thr Pro Gly Glu Arg Ser His Pro Gln
625 630 635 640

Gly Leu Gly Pro Pro Ala Pro Glu Ala Pro Glu Leu Gly Gly Pro Gly
645 650 655

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Leu Lys Lys Arg Phe Gly Lys Lys Ala Ala Val Pro Thr Pro Arg Leu
            660                 665                 670

Tyr Thr Glu Ala Leu Gln Glu Lys Met Gln Arg Gly Phe Leu Ala Gln
        675                 680                 685

Lys Leu Gln Gln Tyr Lys Arg Phe Val Glu Asn Tyr Arg Arg His Ile
    690                 695                 700

Val Cys Val Ala Ile Phe Ser Ala Ile Cys Val Gly Val Phe Ala Asp
705                 710                 715                 720

Arg Ala Tyr Tyr Tyr Gly Phe Ala Leu Pro Pro Ser Asp Ile Ala Gln
                725                 730                 735

Thr Thr Leu Val Gly Ile Ile Leu Ser Arg Gly Thr Ala Ala Ser Val
            740                 745                 750

Ser Phe Met Phe Ser Tyr Ile Leu Leu Thr Met Cys Arg Asn Leu Ile
        755                 760                 765

Thr Phe Leu Arg Glu Thr Phe Leu Asn Arg Tyr Val Pro Phe Asp Ala
    770                 775                 780

Ala Val Asp Phe His Arg Trp Ile Ala Met Ala Ala Val Val Leu Ala
785                 790                 795                 800

Ile Leu His Ser Ala Gly His Ala Val Asn Val Tyr Ile Phe Ser Val
                805                 810                 815

Ser Pro Leu Ser Leu Leu Ala Cys Ile Phe Pro Asn Val Phe Val Asn
            820                 825                 830

Asp Gly Ser Lys Leu Pro Gln Lys Phe Tyr Trp Trp Phe Phe Gln Thr
        835                 840                 845

Val Pro Gly Met Thr Gly Val Leu Leu Leu Leu Val Leu Ala Ile Met
    850                 855                 860

Tyr Val Phe Ala Ser His His Phe Arg Arg Arg Ser Phe Arg Gly Phe
865                 870                 875                 880

Trp Leu Thr His His Leu Tyr Ile Leu Leu Tyr Ala Leu Leu Ile Ile
                885                 890                 895

His Gly Ser Tyr Ala Leu Ile Gln Leu Pro Thr Phe His Ile Tyr Phe
            900                 905                 910

Leu Val Pro Ala Ile Ile Tyr Gly Gly Asp Lys Leu Val Ser Leu Ser
        915                 920                 925

Arg Lys Lys Val Glu Ile Ser Val Val Lys Ala Glu Leu Leu Pro Ser
    930                 935                 940

Gly Val Thr Tyr Leu Gln Phe Gln Arg Pro Gln Gly Phe Glu Tyr Lys
945                 950                 955                 960
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Ser Gly Gln Trp Val Arg Ile Ala Cys Leu Ala Leu Gly Thr Thr Glu
                965                 970                 975

Tyr His Pro Phe Thr Leu Thr Ser Ala Pro His Glu Asp Thr Leu Ser
            980                 985                 990

Leu His Ile Arg Ala Val Gly Pro Trp Thr Thr Arg Leu Arg Glu Ile
        995                 1000                1005

Tyr Ser Ser Pro Lys Gly Asn Gly Cys Ala Gly Tyr Pro Lys Leu Tyr
    1010                1015                1020

Leu Asp Gly Pro Phe Gly Glu Gly His Gln Glu Trp His Lys Phe Glu
1025                1030                1035                1040

Val Ser Val Leu Val Gly Gly Gly Ile Gly Val Thr Pro Phe Ala Ser
                1045                1050                1055

Ile Leu Lys Asp Leu Val Phe Lys Ser Ser Leu Gly Ser Gln Met Leu
            1060                1065                1070

Cys Lys Lys Ile Tyr Phe Ile Trp Val Thr Arg Thr Gln Arg Gln Phe
        1075                1080                1085

Glu Trp Leu Ala Asp Ile Ile Gln Glu Val Glu Glu Asn Asp His Gln
    1090                1095                1100

Asp Leu Val Ser Val His Ile Tyr Val Thr Gln Leu Ala Glu Lys Phe
1105                1110                1115                1120

Asp Leu Arg Thr Thr Met Leu Tyr Ile Cys Glu Arg His Phe Gln Lys
                1125                1130                1135

Val Leu Asn Arg Ser Leu Phe Thr Gly Leu Arg Ser Ile Thr His Phe
            1140                1145                1150

Gly Arg Pro Pro Phe Glu Pro Phe Phe Asn Ser Leu Gln Glu Val His
        1155                1160                1165

Pro Gln Val Arg Lys Ile Gly Val Phe Ser Cys Gly Pro Pro Gly Met
    1170                1175                1180

Thr Lys Asn Val Glu Lys Ala Cys Gln Leu Val Asn Arg Gln Asp Arg
1185                1190                1195                1200

Ala His Phe Met His His Tyr Glu Asn Phe
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<210> 693
<211> 277
<212> PRT
<213> Homo sapiens

<400> 693

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Thr Ser Leu Ser Pro Arg Ser Glu Met Arg Ala Asp Asp Lys Phe Val
35 40 45

Asn Val Thr Ile Val Thr Ile Leu Ala Glu Thr Thr Ser Asp Asn Glu
50 55 60

Lys Thr Val Thr Glu Lys Ile Asn Lys Ala Ile Arg Ser Ser Ser Ser
65 70 75 80

Asn Phe Leu Asn Tyr Asp Leu Thr Leu Arg Cys Asp Tyr Tyr Gly Cys
85 90 95

Asn Gln Thr Ala Asp Asp Cys Leu Asn Gly Leu Ala Cys Asp Cys Lys
100 105 110

Ser Asp Leu Gln Arg Pro Asn Pro Gln Ser Pro Phe Cys Val Ala Ser
115 120 125

Ser Leu Lys Cys Pro Asp Ala Cys Asn Ala Gln His Lys Gln Cys Leu
130 135 140

Ile Lys Lys Ser Gly Gly Ala Pro Glu Cys Ala Cys Val Pro Gly Tyr
145 150 155 160

Gln Glu Asp Ala Asn Gly Asn Cys Gln Lys Cys Ala Phe Gly Tyr Ser
165 170 175

Gly Leu Asp Cys Lys Asp Lys Phe Gln Leu Ile Leu Thr Ile Val Gly
180 185 190

Thr Ile Ala Gly Ile Val Ile Leu Ser Met Ile Ile Ala Leu Ile Val
195 200 205

Thr Ala Arg Ser Asn Asn Lys Thr Lys His Ile Glu Glu Glu Asn Leu
210 215 220

Ile Asp Glu Asp Phe Gln Asn Leu Lys Leu Arg Ser Thr Gly Phe Thr
225 230 235 240

Asn Leu Gly Ala Glu Gly Ser Val Phe Pro Lys Val Arg Ile Thr Ala
245 250 255

Ser Arg Asp Ser Gln Met Gln Asn Pro Tyr Ser Arg His Ser Ser Met
260 265 270

Pro Arg Pro Asp Tyr
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<210> 694
<211> 157
<212> DNA
<213> Homo sapien

<400> 694
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tagtaatgtg atgctgatgc tgttaaccaa agggcagaat aaataagcaa aatgccaaaa 120
ggggtcttaa ttgaaatgaa aatttaattt tgttttt 157

<210> 695
<211> 241
<212> DNA
<213> Homo sapien

<400> 695
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aaaaaggaga aaaaagacag aactaaaccc gtttaggaaa aagggaccga gggacagcag 120
tggttaagta atccactgag gacctgaagg ggaaaatgga cttacctttc tcatatactt 180
ggcctggcta ggacactggg tgccagacag ccttctgagg ggattttctt tctaaatgag 240
g 241

<210> 696
<211> 188
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(188)
<223> n = A,T,C or G

<400> 696
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gnagacaagc atagatggga ttctggctga tgtgaagaac ttggagaaca ttagggacaa 120
cctgccccca ggctgctaca atacccaggc tcttgagcaa cagtnaagct gccataaata 180
tttctcaa 188

<210> 697
<211> 289
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(289)
<223> n = A,T,C or G

<400> 697
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tgtccagctt gcctcagatc ttcaggntct ctcttctctg aggcagctaa gcttctacat 240
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<210> 698
<211> 193
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(193)

<223> n = A,T,C or G

<400> 698
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tgtaatattt cgcttcctaa atttcttcca cctacagata atagacaaca agtctgagaa 120
actaaggcta accaaactta gatataaatc ctaccaataa aatttttcag ntttaagttt 180
tacagtttga ttt 193

<210> 699
<211> 279
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(279)
<223> n = A,T,C or G

<400> 699
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tccagnggga taccctcctt gtcttgaatt ttggctttga cattctcaat ggtgtcactg 180
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gcgtccgcac gaccgccgcc accaaccagc tcggccgcc 279

<210> 700
<211> 340
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(340)
<223> n = A,T,C or G

<400> 700
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gtcctctatg gcccagacga ccccaccatt tccccctcat acacctatta ccgnccaggg 180
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attgatggga acatccagca acacacacaa gagctcttta tctccaacat cactgagaag 300
aacagcggac tctatacctg ccaggccaat aactcagcca 340

<210> 701
<211> 277
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(277)
<223> n = A,T,C or G

<400> 701
ccactggctg agntattggc ctggcaggna tagagtccgc tgttcttctc agtgatgttg 60
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gcaggtgggt tagaggctgc atggcaggag aggctgaggt tcacccctgg acggtaatag 180
gngtatgagg gggaaatggt ggggtcgtct gggccataga ggacattcag gatgactggg 240

tcgctgtggt caacacttaa tttgttctgg attccac 277

<210> 702
<211> 255
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(255)
<223> n = A,T,C or G

<400> 702
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cggaaatcca ttgcccgtgt tctcanagtt attaaccaga ctcagaaaga aaacctcagg 120
aaattctaca agggcaagaa gtacaagccc ctggacctgc ggcctaagaa gacacgtgcc 180
atgcgccgcc ggctcaacaa gcacgaggag aacctgaaga ccaagaagca gcagcggaag 240
gagcggctgt acccg 255

<210> 703
<211> 224
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(224)
<223> n = A,T,C or G

<400> 703
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aggacagcag gggncctggg gttttagcnt ctggcccagg agttatgtgt ccataaccaa 120
agggagcaca gtctgcaccc agctctcatc ccatcggagc tgctgcgact cccgcaggnt 180
cttccggaac tggtttagct tgcccgcagn atcagnaaag tttg 224

<210> 704
<211> 445
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(445)
<223> n = A,T,C or G

<400> 704
aggtaaaaag cagcctgggc aagagaagtg ggtgggttta ggagaatccc tttcgaaaaa 60
ttcagagcat tattattaat ccttcttaaa ttaaatgcag ggccaagcat gctgcacgtg 120
gaatctggac aattttttga taaactttaa ggctgctaaa taatttacag aaactgtgaa 180
tgcattttca ttttacgagg caaaagagaa aatattcaag attgcatagc aattttattt 240
tttgaaatgg ntatcctaaa gaatttcctt aaattcagat tttgcaaaat tcctactctc 300
caagtcatca agngaacact aaaagcaact ttactcgtga atacagggga ctctttacga 360
ggcatgcatt tttcataaat ctaggccaaa gngaactaat tgagatttaa ttctaaattc 420
atcctgngat ttctgcatat aatat 445

<210> 705
<211> 107
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(107)
<223> n = A,T,C or G

<400> 705
atcacccnat ttaattaaaa atccctggnc tnaggaccta cagcanngta ctgnagaact 60
tnagaacctn aattagccat ttgccatctt nagagagtct tnnccat 107

<210> 706
<211> 113
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(113)
<223> n = A,T,C or G

<400> 706
aaatagtttc taaaggcaag gncttgctat gttgcttagg ctggttttga aaagtccctt 60
ttggggggat gctttcactg cttcacttcc tttctatgac agctnaggga atc 113

<210> 707
<211> 283
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(283)
<223> n = A,T,C or G

<400> 707
ctgctccaag gccatcaaga tcttcatggg gaggacggag ctgaagntgg aagacaagca 60
ccgtgtggtg atccagcgtg atgagggtca ccacgtggcc tacaccacgc gggaggtggg 120
ccagtanctg gnggnggagt ccagcacggg catcatcgnc atctgggaca agaggaccac 180
cgtgttcatc aagctggctc cctcctanaa gggcaccgtg ngnggcctgt gtgggnactt 240
tgaccaccgc tccaacaacg acttcaccac gcgggnccac atg 283

<210> 708
<211> 341
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(341)
<223> n = A,T,C or G

<400> 708
ctgtccaatg acaacaggac cctcactcta ctcagtgtca caaggaatga tgtaggaccc 60
tatgagtgtg gaatccagaa caaattaagt gttgaccaca gcgacccagt catcctgaat 120
gtcctctatg gcccagacga ccccaccatt tccccctcat acacctatta ccgtccaggg 180
gngaacctca gcctctcctg ccatgcagcc tctaacccac ctgcacagta ttcttggctg 240
attgatggga acatccagca acacacacaa gagctcttta tctccaacat cactgagaag 300

aacagcggac tctatacctg ccaggccaat aactcagcca g 341

<210> 709
<211> 376
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(376)
<223> n = A,T,C or G

<400> 709
ccaagtccag gggcgtggag gccgcccggg agcggatgtt caatggtgag aagatcaact 60
anaccgaggg tcgagccgtg ctgcacgtgg ctctgcggaa ccggtcaaan acacnnatcc 120
tggtagacgg caaggatgtg atgccagagg tcaanaaggt tctgganaag atgaagtctt 180
tctgccagcg tgtccggagc ggngactgga aggggtanac aggcaagacc atcacggacg 240
tcatcaacat tggcattggc ggctccgacc tgggacccct catggngact gaagccctta 300
agtcatactc ttcaggaggn ccccgcgnct gggatgnctc caacattgat ggaactcaca 360
ttgccaaaac cctggc 376

<210> 710
<211> 232
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(232)
<223> n = A,T,C or G

<400> 710
ctgctgtata ttcagcattg tgggaggagc tgtgaaagac anagaacagt anagggtgtg 60
gnccctgccc tcgagaggnt tanagtctag gtggagaaac gggaancagg acacatgggg 120
agccgagaga aaanagtcca ggccagtatg ttacaggagc tggaaggtgt ttggggtcag 180
accccaatac tccaagtaca ctaagcactt cagtgcctcc aggggctcaa cg 232

<210> 711
<211> 317
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(317)
<223> n = A,T,C or G

<400> 711
caggtaaaat agatttaatt taggaaagct cattttatat gagtttccaa ctaattatta 60
gagtcagaaa caaagaaaat aaaatcagag aaaatcctct gtagaaaaaa tacacaaaga 120
acatttctac atgtgaaaaa acagtaaaca gtgttaacat ccaagttatt agtctcaatt 180
ccacgtctcc tagtgaacac cactatcaac cttgagatct gatttgntct tgtcattctt 240
cactgagtag atgaaatatg ttaaggtgtc tttttcattc actggaatag acctaaagtg 300
gcaaccaact atctcaa 317

<210> 712
<211> 154
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(154)
<223> n = A,T,C or G

<400> 712
tntgtagaaa aaatanacaa agaacatttn tanatgtgaa aaaacagtaa acagngttaa 60
catccaagtt attagtctca attccacgtc tcctagtgaa caccactntc aaccttgaga 120
tctgatttgn tcttgtcatt cttcactgag taga 154

<210> 713
<211> 177
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(177)
<223> n = A,T,C or G

<400> 713
ccattcagag gtagaagatg gaggggcggc agattctggc agggcagcag agggctctat 60
gcacgggttt caaacctgtt ttccacactc tgtctttgca gntttggtaa ttctgtggtc 120
tatttatana gatattaaaa tcttgtttat aaaaaaaaaa aaaaaaaaaa aaaaaaa 177

<210> 714
<211> 216
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(216)
<223> n = A,T,C or G

<400> 714
ctgtgtttcg gctataaaaa ggcggctgaa agaaggggaa aattanttta gacttaattg 60
gaagtttcat atggcacaca ttaccagnag agaaaaagat ataaacggca ataaatatta 120
ggctcgattt gagaaactct ccccacctca atgctttctt ttcccttgct atttaagggt 180
ctactttgca acccgtgtgn gtgtttgtgt gtgtgt 216

<210> 715
<211> 376
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(376)
<223> n = A,T,C or G

<400> 715
ctgtgcgagt gtaccggatg cttccacctc tcaccaagaa ccagagaaaa gaaagaaagt 60
cgaagtccag ccgagatgct aagagcaagg ccaagaggaa gtcatgtggg gattccagcc 120
ctgatacctt ctctgatgga ctcagcagct ccactctgcc tgatgaccac agcagctaca 180
cagttccagg ctacatgcag gacttggagg nggagcaggc cctgactcca gctacaacag 240

atgaggatga ggaagggaaa ttacctgagg acatcatgaa gctcttggag cagncggagt 300
ggcagccaac aagcgtggat gggaaggggt acntactcaa tgaacctgga gnccagccca 360
cctctgtcta tggaga 376

<210> 716
<211> 96
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(96)
<223> n = A,T,C or G

<400> 716
aaacttttta tttgcatatt aaaaaaattg tgcattccaa taattaaaat catttgaana 60
aaaaaaaaat ggcnctntga ttaaactgca ttacag 96

<210> 717
<211> 366
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(366)
<223> n = A,T,C or G

<400> 717
gatggaaagg atacagatga catcaagatc cccatgctgt tcttattcag caaagaagga 60
agtatcatac tggatgccat ccgggaatat gaggaggtag aagngctcct ctctgataaa 120
gcaaaagatc gagatcctga aatggaaaat gaagaacaac catcctctga aaatgattct 180
cagaatcaga gtggtgaaca gatttcatca agttctcagg aggntgattt ggntgatcaa 240
gagtcttctg aggaaaattc tctaaattct cacccagaat cattatctct agcagatatg 300
gacaatgctg caagcatttc cccttctgaa cagacttcta atnccacaga aaaccatgag 360
actaca 366

<210> 718
<211> 200
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(200)
<223> n = A,T,C or G

<400> 718
aaacatctca catatanaaa ataggtacaa tttaattttt ctgcttgccc aagaaacaaa 60
gcttctgtgg aaccatggaa gaagatgaaa atgagactgg caaagaacaa atgctgaatc 120
tgaagaagat ttgggcaaat aatctgcata cttttaattg ggaataagat ggaaaatatg 180
aatgctaaat caaatttttt 200

<210> 719
<211> 336
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(336)
<223> n = A,T,C or G

<400> 719
ctgtctcaca ctttgcaagc tgtgagagac acatcagagc cctgggcact gtcactgctt 60
gcagcctgag ngtaactccc tccttttcta tctgagctct tcctcctcca catcacggca 120
gcgaccacag ctccagtgat cacagctcca aggagaacca ggccagcaat gatgcccacg 180
atggggatgg tgggctggga agacagctcc catctcaggg tgaggggctt gggcagaccc 240
tcatgctgca catggcaggn gtatctctgc tcctctccag aaggcaccac cacagccgcc 300
cacttctgga aggntccatc cccttgcagg ccttgg 336

<210> 720
<211> 167
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(167)
<223> n = A,T,C or G

<400> 720
ggagagtgct agtgaggcgg ccaagaagta natggaggag aatgannagc tcaagaaggg 60
agctgctgtt gacggaggca agttggatgt cgggaatgct gaggtgaagt tggaggaaga 120
gaacaggagc ctgaaggctg acctgcagaa gctaaaggac gagctgg 167

<210> 721
<211> 134
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(134)
<223> n = A,T,C or G

<400> 721
cctagtatga ggagcgttat ggagtggaag tgaaatcana tggctaggcc ggaggncatt 60
aggagggctg agagggcccc tgttaggggt catgggctgg gntttacgtg cgtgaggagg 120
ggcggagctt gcag 134

<210> 722
<211> 353
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(353)
<223> n = A,T,C or G

<400> 722
aaaaatatat acaactatga tgttcaaata tgtattctga gccattatgt tcaaacataa 60
atatctggga aattcaaact gctgcaacaa gttaggaaag gattaaggaa aaatgatgag 120
ctacaaatta tgtagttgga ggaagaaaaa aatgttactt agcatttatg tctggatagg 180
tatgtatttt ctaatttaca tacacatatc cagntgagta tagacaacca tcaaaatgta 240

accagttaca cagagactag actaagccaa cactattttc tataacaggn aacagtagng 300
atttcaaaaa ttttaatatc tcaatagttt caccaaaaat tatttatggg aat 353

<210> 723
<211> 268
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(268)
<223> n = A,T,C or G

<400> 723
ctgagaagag cgccaggaag ccctgggtgc gagagttgat gacgtcgatc tcgtgcaggg 60
acacggngtg caccacctcc ttgcgtttct ggagctcccc atctgggcac tgcacgaact 120
tggnctggga gcccatagcg tcgtagtcgc gggcgngtgt gaaggagcgg cccaacttgg 180
agatcttgcc cgtcgccttg tcgatggnga tcacgtcccc ggcctggacc ttgtccttgg 240
ncagggactc aatcatcttg ntgcccag 268

<210> 724
<211> 344
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(344)
<223> n = A,T,C or G

<400> 724
aaagaatcag caaaatttca aataaaaaat tatgaaaata ttatcctcat tagttcattt 60
agncccatga aattaattat tttctctgct cgatcttggt ggacagtttc atgaagctgt 120
cagttagttc attaaagttt tggaaattct cagacagtgc agtggtatca gaaacttgta 180
ttcaagagta naggtcagag ncttcttttc ttttcttttt gagatggagt cttgctctgt 240
tgccagactg gagtgcagtg gtgcgatctg ggctcactgc aatctccacc tcccgggttc 300
aagcgattct cctgcctcag cctcccgagt aactgggact acag 344

<210> 725
<211> 345
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(345)
<223> n = A,T,C or G

<400> 725
aaacaagaga aagtagacag atacatgttg gnaaatgcta actgtccata ttcacataga 60
gacacagtgt actctctgag cccaatatan agagaaagga ggaaaaaagc tagaattcta 120
tgcactacta cacaggggcc tagcaccctc cagcttccag cagagcgaag ggagcaggnt 180
tttctttttt cccacagagc tcggggggtt gattccatac agnttttgtt cagacaggaa 240
gggataaaaa tgaacttcga acagaaaggg gtagagactc ttttcccatt gtattctgct 300
caaggnattt ccccccaaat aaattgagaa ccatggagnn gagaa 345

<210> 726
<211> 305

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(305)
<223> n = A,T,C or G

<400> 726
ttgcctgatg tcagagcccc tccacacatg agcctgctcc ctactgccaa caccgtggcc 60
cagacagaga cgctttccga ggaagaggtg aagctcctgc agtcgctgaa gnaagganag 120
cagatcgtga ggaaaaaggg cgccgaggtt gggggcatgt ctctcttctt accaagctag 180
actgggntgc cttttctaac tattccagcc ctacagggcg aggggccata atggagtatc 240
ccgcccсttt agaccccagg cgctcaccgg cagggcaaga aggngaaatc cagcagccgc 300
gccag 305

<210> 727
<211> 387
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(387)
<223> n = A,T,C or G

<400> 727
ccaacgaggc atcacctctg acggtgtcag tcatcgatga ccggctcaag gagaagatgg 60
tggtggagtt ccgccacatg aggaaccatg cctatgagcc actcgccagc ttcctagact 120
tcattactta nagttacatg atcgacaacg ngatcctgct catcacaggc acgctgcacc 180
agcgctccat cgctgagctc gtgcccaagt gccacccact aggcagcttc gagcagatgg 240
aggccgtgaa cattgctcag acacctgctg agctctacaa tgccattctg gtggacacgc 300
ctcttgcggc tttttccag gactgcattt cagagcagga ccttaacgag atgaacatcg 360
agatcatccg caacaccctc tacaagg 387

<210> 728
<211> 109
<212> DNA
<213> Homo sapien

<400> 728
ctgactgaca gccagattgc agatgtggct cgcttttgta accgctaccc taatatcgaa 60
ctatcttatg aggtggtaga taaggacagc atccgcagtg gcgggccag 109

<210> 729
<211> 329
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(329)
<223> n = A,T,C or G

<400> 729
aaagcatagg actatagtca gcatgctaga ctgagaggta aacactgatg caattagaac 60
aggtactgat gctgtcagtg tttaacacta tgtttagctg tgtttatgct ataaaagtgc 120
aatattagac actagctagt actgctgcct catgtaactc caaagaaaac aggatttcat 180

taagtgcatt gaatgtggct atttctctaa gttactcata ttgtcctttg cttgaatgca 240
atgccgngca gatttatgtg gctgctattt ttattttctg ngcattactt taacacctta 300
aagngagaag caaacatttc cttcttcag 329

<210> 730
<211> 238
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(238)
<223> n = A,T,C or G

<400> 730
aaaaagtggc agagtgactt aactgatcat gcatgatccc tcatccctga aattgagttt 60
atgtagncat tttacttatt ttattcatta gctaactttg tctatgtata tttctagata 120
ttgattagtg taatcgatta taaaggatat ttatcaaatc cagggattgc attttgaaat 180
tataattatt ttctttgctg aagnattcat tgtaaaacat acaaaataaa catatttt 238

<210> 731
<211> 297
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(297)
<223> n = A,T,C or G

<400> 731
aaactgaatt ttttgacctt ggaaaatatt tttcttactt taccaaggtg aagtttcctt 60
aattagacta attattttat ccccatccca gggtataaac aggaattgtt ttgatagtgg 120
tggagttatt cactgcaaca aagcaacaat gttgtccatg attcaaaatc taagcagttt 180
cgattttgcc tgtgaatatg gngtctgtca ttcagggcat agctcactgt aggctagcct 240
ctgcttactt aagnctcttc tctgacatac tcaatggaag aatatttaga tttattt 297

<210> 732
<211> 370
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(370)
<223> n = A,T,C or G

<400> 732
ctgtcagtct tcctgaaatg aagaaactac accagggctg ctatatcaga gcaaccccaa 60
ccagcactcc aatcatgatg ccgacagngg ccccaattag aagntcaaaa acaaaaatta 120
agttaggtag ncagacatct ataaatacta gtatccgcat gaatgaaaac accctggctt 180
tggnatggct acagaaatcc atctggaaat tattcaaaag gacgtggttc agggaaaagg 240
gggtaggcag ggcatggggg gaggggaaca cacaaaaccc ccaagcagag gtaaaatgaa 300
tattggaaca cacccgcagc aaacactgta catagacttg aggcagatgc ctctaacaca 360
acacatatac 370

<210> 733
<211> 242

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(242)
<223> n = A,T,C or G

<400> 733
cctcctattt attctagcca cctctagcct agccgtttac tcaatcctct gatcagggtg 60
agcatcaaac tcaaactacg ccctgatcgg cgcactgcga gcagtagccc aagcaatctc 120
atatgaagnc accctagcca tcattctact atcaacatta ctaataagtg gctcctttaa 180
cctctccacc cttatcacaa cacaagaaca cctctgatta ctcctgccat catgaccctt 240
gg 242

<210> 734
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 734
cctttcttgt aagtgaagaa aaaggaatgc agcaaagaag agttcgacat tggagtcctt 60
agttccatca ggatcccatt cgcagccttt agcatcatgt agaagcaaac tgcacctatg 120
gctgagatag gtgcaatgac ctacaagatt ttgngttttc tagctgtcca ggaaaagcca 180
tcttcagnct tgctgacagt caaagagcaa gtgaaaccat ttccagccta aactacataa 240
aagcagccga accaatgatt aaagacctct aaggctccat aatcatcatt aaatatgccc 300
aaactcattg ngacttttta ttttatatac aggattaaaa tcaacattaa atcatcttat 360
ttacatgg 368

<210> 735
<211> 308
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(308)
<223> n = A,T,C or G

<400> 735
ctgtccaata ggcgtagcta tccggacaga gcacgtttgc agaaggggga ctcttcttcc 60
aggtagctga aaggggaaga cctgacgtac tntggttagg ntaggacttg ccctcgtggn 120
ggaaactttt cttaaaaagt tataaccaac ttttctatta aaagtgggaa ttaggagaga 180
aggtaggggt tgggaatcag agagaatggc tttggnctct tgcttgtggg actagcctgg 240
cttgggacta aatgccctgc tctgaacacg aagcttagna taaactgatg gatatcccta 300
ccttgaaa 308

<210> 736
<211> 354
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(354)
<223> n = A,T,C or G

<400> 736
cc ttctgcta cgtagtctac aacagaagga ttcaggcaat tacctctgcc atgcggngga 60
acatgggttc atacaaactc ttcttaaggt aaccctggaa gtcattgaca cagagcattt 120
ggaagaactt cttcataaag atgatgatgg agatggctct aagaccaaag aaatgtccaa 180
tagcatgaca cctagccaga aggtctggta cagagacttc atgcagctca tcaaccaccc 240
caatctcaac acgatggatg agttctgtga acaagtttgg aaaagggacc gaaaacaacg 300
tcggcaaagg ccaggacata ccccagggaa cagtaacaaa tggaagcact taca 354

<210> 737
<211> 198
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(198)
<223> n = A,T,C or G

<400> 737
ctgccgctgc acacgctcgt tcttctctgc ctcagtgatg cgcttctcct cattgcggnc 60
atcccggatg ccctcactag acagctccgc gctgtagccc gtgggctctg cgccctcatc 120
ctgcaagctc tcctggacat ggtagctcac cggctcgtac acggggggtg gtgggggcgg 180
gggngctgtc atcaccag 198

<210> 738
<211> 228
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(228)
<223> n = A,T,C or G

<400> 738
gtgccatggc acacagcctg ggtgcacacc cagcgncctc tcttgcaggt gcaggtattg 60
cagtccacct tgatcttggc gccggaagaa tanaggtcgt tgttatggac gcaagggcat 120
tccttctcca ccacgcagcc accccggccg tcatccatca gcccgtcggg gcacacacag 180
ccactgacac actctgtgtg gnaatagccg gcggccagcg nctggcag 228

<210> 739
<211> 378
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(378)
<223> n = A,T,C or G

<400> 739
aaaaaataca ggagtcgata gcagcagttg gtgacgagat ggcactcaga aacggcgttg 60
acgtaattta ggacgtggaa tcataagcga aacagcacac tgtttgaata aagagcgagt 120
cggnatttat atttgntttt cttttgtcat gattatttga tttttaagnt gctccagcta 180

aggcattttt ttgtattagn atttctatta gggaaccttt cttattaggn ggnttgtatt 240
gtctggnttc taacatgcag gtagctgttt ggcagttaaa cacgtttaga gtaatttgag 300
ttacaacgtg tgaaactgag caaaaaagca gngataagnt tgggttacca taccaaatat 360
ttgttttccc actggaaa 378

<210> 740
<211> 200
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(200)
<223> n = A,T,C or G

<400> 740
ccacttgagt ggntcctggc tgcttctgtg attgttaggt cttgagagat tatggacccg 60
aggcattctg ggtaccccat caattggctg atggncttct atttgggctg cgcttcttct 120
aaaaagggga gctcaaaggt ctttttttcc cccactgcag agctaaaaaa gtccctgtac 180
gccatcttct cccagtttgg 200

<210> 741
<211> 273
<212> DNA
<213> Homo sapien

<400> 741
ctgcttggca tcgtaatggg ccggtggcat catgagcccc agaatcagcc ttgccaggtc 60
tccagagatc tcagacttca ggtcagtcat taagtcccgg ccaaagtgag acttgaaggt 120
ctgccggatc tgctgccgct ggacattgct gcggtgcgtg atgatatcga tgattgtgtc 180
ttcgtcagtc ccgagtccct tcatggcttt ccgcagcgct ttggcatctg cgtcagggtt 240
gaagtcattg gctgggcgca caggtccctt cag 273

<210> 742
<211> 297
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(297)
<223> n = A,T,C or G

<400> 742
ctgcagttgc tccctttagg gttataaaat aatgacccaa atgttacatg tgttgatatt 60
ataacttgtc agttactgat gtctgtggna tcctaccctc atctctgaaa gggataatac 120
tgaataatta ttagaaaact ataaaacttc acactttgta ccattaaaac ctaaaatttt 180
aatcttgncc ttttttacta tggatcagtc ggcactcggg aacagcagca aggaaaagag 240
gcaaatttca ttcacatgtt ctgngntcat acctcttctc tacctaattg ttcattt 297

<210> 743
<211> 381
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(381)

<223> n = A,T,C or G

<400> 743
ctgcacctcc acctccttga agttgaagat actattgcca tcaaagccag cagccagctc 60
tggacagtat gcctgcaggg aacctccatg ccggctcagt gacacactct ctgcagccag 120
ggtaatgaac ttgtcctcag ctacaaaagc tgtgagcttg gctgtgctca cctccagggt 180
taggtttagc agccgctttg gggtaatgg ctcaggggca cggccttcta gctcagaagn 240
agntcctgaa gnctctagtg caagggatgg tacagtctca ggaaacacag nggctcttag 300
taggnctcgg cactgtagag nggnggnatc cccagagctg gngatgattt ggttgtcatc 360
caggaagcgg caacacgaca g 381

<210> 744
<211> 167
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(167)
<223> n = A,T,C or G

<400> 744
cagcgngggg ctcggagagg tgctcggatt ctcgtagctg tgccgggact taaccaccac 60
catgtcgagc aaaagaanaa agaccaagac caagaagcgc cctcagcgtg caacatccaa 120
tgtgtttgct atgtttgacc agtcacagat tcaggagttc aaagagg 167

<210> 745
<211> 96
<212> DNA
<213> Homo sapien

<400> 745
ccacaaactc ctctggctgt actccctcct gcaggagacc ggcctcactg cactcagcag 60
gctcttctcc ctgcgattca cttctgggac agtcac 96

<210> 746
<211> 391
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(391)
<223> n = A,T,C or G

<400> 746
ccattacgca gccgcttcag caaacagggc tcctcccggc ccgagggcgg gaccacagtg 60
gccgtcagca ggctgagatc cgtctctgag atgttgatgg ggatgtcggc agcagagccg 120
acctttaggt gggacatacg catggagtcg tcacctgtga cccgggcagt gaaggggctg 180
cctgggacgt gctgttcatt gtacttgact agaatgctgt agtcccccgg cagcacaggc 240
aagtaggaca cgctgcnatg tcccatcctg gttgtcagtg cagtgttgct tgttcagtat 300
ctcaagccca gaaagatgaa ttaatccttg aaggaaatga cattgagctt gtttcaaatt 360
cagcggcttt gattcagcaa gccacaacag t 391

<210> 747
<211> 408
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(408)
<223> n = A,T,C or G

<400> 747
aaagttgttt gtgccttttt atttttgttt ttaatgcttt gatatttcaa tgttagcctc 60
aatttctgaa naccataggt agaatgtaaa gcttgtctga tcgttcaaag catgaaatgg 120
atacttatat ggaaattctg ctcagataga atgacagtcc gtcaaaacag attgcttgca 180
aaggggaggc atcagtgtcc ttggcaggct gatttctagg taggaaatgt ggnagcctca 240
cttttaatga acaaatggcc tttattaaaa actgagtgac tctatatagc tgatcagttt 300
tttcacctgg aagcatttgt ttctactttg atatgactgt ttttcggaca gtttatttgt 360
tgagagngtg accaaaagtt acatgtttgc acctttctag gtgaaaat 408

<210> 748
<211> 337
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(337)
<223> n = A,T,C or G

<400> 748
ggcggagaga ggcgagcacc gggaagggga gcgnggggcc gctggaatgg gtgaatttaa 60
ggnccatcga gtacgtttct ttaattatgt tccatcagga atccgctgtg tggcttacaa 120
taaccagtca aacagattgg ctgtttcacg aacagatggc actgtggaaa tttataactt 180
gtcagcaaac tactttcagg agaaattttt cccaggtcat gagnctcggg ctacagaagc 240
tttgtgctgg gcagaaggac agcgactctt tagtgctggg ctcaatggcg agattatgga 300
gnatgattta caggcgttaa acatcaagta tgctatg 337

<210> 749
<211> 261
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(261)
<223> n = A,T,C or G

<400> 749
ccgggaggct ctgattattt acccaccaca ggtaggttgt gttctgaatc tcaggttcac 60
aggttaaggc tacagcatcc tcatcctcca cggggttgga gttgttgctg gngatgaagg 120
gtttgggtgg ctctgcatag actgtgatcg ncgtgactgt ggncctattg aggccagtgt 180
ctgagttatg ggcttggcac gtataggatc cactattatt cacagngatg ttggggataa 240
agagctcttg ggnggattgc t 261

<210> 750
<211> 150
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(150)

<223> n = A,T,C or G

<400> 750
aacgctgang acatgacatc caaagattac tactttgact cctacgcaca ctttgnnatc 60
cacgaggaga tgctgaagga cgaggtgcgc accctcactt accgcaactc catgtttcat 120
aaccggcacc tcttcaagga caaggngnng 150

<210> 751
<211> 288
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(288)
<223> n = A,T,C or G

<400> 751
aaaacttttg ttaagaaaaa ctgccagttt gtgcttttga aatgtctgtt ttgacatcat 60
agtctagtaa aattttgaca gtgcatatgt actgttacta aaagctttat atgaaattat 120
taatgtgaag nttttcattt ataattcaag gaaggatttc ctgaaaacat ttcaagggat 180
ttatgtctac atatttgtgt gtgtgtgtgt gtatatatat gtaatatgca tacacagatg 240
catatgtgta tatataatga aatttatgtt gctggnattt tgcatttt 288

<210> 752
<211> 248
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(248)
<223> n = A,T,C or G

<400> 752
ctggcactga ggattatatc catataagaa ttcaacagag aaacggcagg aagaccctta 60
ctactgtcca agggatcgct gatgattacg ataaaaagaa actagtgaag gcgtttaaga 120
aaaagtttgc ctgcaatggt actgtaattg agcatccgga atatggagaa gtaattcagc 180
tacagggnga ccaacgcaag aacatatgcc agttcctcgt agagattgga ctggctaagg 240
acgatcag 248

<210> 753
<211> 346
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(346)
<223> n = A,T,C or G

<400> 753
ctgctagaaa acagggaaga tattagccaa tatggaattg ccaggttctt cactgaatat 60
tttaacagtg tatgccaggg aacacacatt ctctttcgag aattcagctt cgtccaagcc 120
acccccccaca atagggnatc atttttacgg gccttctgga gatgcttccg aactgtgggc 180
aaaaatggcg atttgctgac catgaaagaa tatcactgtt tgctgcaatt actgtgtcct 240
gatttcccgc tggagctcac tcagaaagca gccaggattg tgctcatgga cgatgccatg 300
gactgcttga tgnctttttc agatttcctc tttgccttcc agatcc 346

<210> 754
<211> 100
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(100)
<223> n = A,T,C or G

<400> 754
gtgccacagg cagccctggg anataggaag ctgggagcaa ggaaagggtc ttagtcactg 60
cctcccgaag ntgcttgaaa gcactcggag aattgtgcag 100

<210> 755
<211> 405
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(405)
<223> n = A,T,C or G

<400> 755
tgtgggccca cttcccaaat ctctggagga tctgcagctt actcataaca agatcacaaa 60
gctgggctct tttgaaggat tggtaaacct gaccttcatc catctccagc acaatcggct 120
gaaagaggat gctgtttcag ctgcttttaa aggtcttaaa tcactcgaat accttgactt 180
gagcttcaat cagatagcca gactgccttc tggnctccct gtctctcttc taactctcta 240
cttagacaac aataagatca gcaacatccc tgatgagtat ttcaagcgtt ttaatgcatt 300
gcagnatctg cgtttatctc acaacgaact ggctgatagt ggaatacctg gaaattcttt 360
caatgngnca tccctggntg agctggatct gtcctataac aagct 405

<210> 756
<211> 306
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(306)
<223> n = A,T,C or G

<400> 756
ccttgggaaa ttacctggaa atgcgactga aatcttcctt cctgaggggt ctgggctctt 60
ggaaatcaaa ccctctcagg ttgggtggct ggacgattct cctcacactt anaatgggac 120
aaggggaacc aggaggcccc caaggggatc cctgggntcc acacgaactc ctcctaccct 180
cattgngtga cagcagccat gcctcctcct ggggatcagg atctattacc tgtgcctgga 240
gaggagggga ctcctcttct cacccgctgg nctctggaca catactgtcc aattcccctg 300
tggcag 306

<210> 757
<211> 321
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(321)
<223> n = A,T,C or G

<400> 757
ctggagggag gntccctggg aggtttttgt ggattccttc tgcagngact cccctggttt 60
ctggntctgg ggacccagng tccaggcgca gnctttttagc acttctcagt gtagacgttg 120
acagggntct tttcccgctt gaatcctgct gagtccccaa atctcttgac ttgtcttggn 180
tacagncacc accagagctg ctcncagntt tgacaaaagc agttgctgct gaagngatcg 240
ttttgaatcc tatcatagca ctggcaggtc ccggnaaatt cttacagtca gcaggcggac 300
ctcgtgtgag ttgaatattc c 321

<210> 758
<211> 278
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(278)
<223> n = A,T,C or G

<400> 758
cgctcggcaa gntctcccag gagaaagcca tgttcagttc gagcgccaag atcntgaagc 60
ccaatggcga gaagccggac gagttcgagt ccggcatctc ccaggctctt ntggagctgg 120
agatgaactc ggacctcaag gctcagctna gggagctgaa tattacggca gctaaggaaa 180
ttgaagttgg tggtggtcgg aaagctatca taatctttgn tcccgntcct caaacctgcc 240
cgggcggccg cttcgagccc tatagtgagg cgnattag 278

<210> 759
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 759
gcaaactgca aaccatggtg agaaattgac gacttcacac tatggacagc ttttcccaag 60
atgtcaaaac aagactcctc atcatgataa ggctcttacc cccttttaat ttgtccttgc 120
ttatgcctgc ctctttcgct tggcaggatg atgctgtcat tagtatttca caagaagtag 180
cttcagaggg taacttaaca gagtatcaga tctatcttgt caatcccaac gttttacata 240
aaataagaga tcctttagtg cacccagnga ctgacattag cagcatcttt aacacagccg 300
ngtgttcaaa tgtacagngg nccttttcag agntggactt ctagactcac ctgttctcac 360
tccctgnttt aattcaaccc agccatgcaa tgccaaataa t 401

<210> 760
<211> 346
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(346)
<223> n = A,T,C or G

<400> 760
ccgaggtttg gatcatggga gaacagcaga aaggggttat tgagggaacc tacactgttc 60
tagctgcacc ccatgccctt ctcagaggaa agcctggcat tgattagata ctgggccaga 120
ctaatactgg cagcagagcc agtgatagta acctgcctac cagaggagcc ttccactggg 180
ttggcaattt tgatctgggc cccggacatc tggcggatct cattaatgtt ggcgccttgg 240
cgcccgatta tgcagccaat taagttattt ggaatggnga gttcatgggt ggtttgagta 300
gatgcatcca aacttgccca atagcctttc acctntggag agacct 346

<210> 761
<211> 256
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(256)
<223> n = A,T,C or G

<400> 761
gagacagact gggtgatgac gctgaatctg cagaggtgct ggtgaccaat tcccctaaag 60
catctacttg tctcctcaaa ctgtgtaaag tgccctctgt ctgccgcttt cctttaatta 120
atacttctgc ttgcttggac atacagtgtc ggagttggnc ctgaaaagtg tgataagact 180
taggntttta cacagnaaga aatgtaccag aactgctgct cagcttcctc acatacattt 240
gataggcaaa tctagc 256

<210> 762
<211> 321
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(321)
<223> n = A,T,C or G

<400> 762
tggactctgg antgatgctg gaagtagata cgaaaatgng aagaacaatg gaacagcaca 60
ctttctggag catatggctt tcaagggcac caagaagaga tcccagttag atctggaact 120
tgagattgaa aatatgggtg ctcatctcaa tgcctatacc tncagagagc agactgtata 180
ctatgccaaa gcattctcta aagacttgcc aagagctgta gaaattcttg ctgatataat 240
acaaaacagc acattgggag aagcagagat tgaacgtgag cgtggagtaa tccttagaga 300
gatgcaggaa gttgaaacca a 321

<210> 763
<211> 348
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(348)
<223> n = A,T,C or G

<400> 763
tgagaaaaca taaagtaacc agcagatttc aatattaaaa agaagtggtt cntcctaaaa 60
aaggtnttag atcatagagt tgggattagg gtaggggata cctattaatc tggnctggaa 120
aaaaagngtg tggagaaggg gagntgtatt gntttctcac aagaggcaaa cttcagncaa 180
acaatgaaga gatagtaggn agggagatgt gtgntagacc aaagactttc tgattgctga 240

taataacaaa tttagcagct ntctacaagt caattaaaat accattctct gagacatttt 300
cagagaggag ctaactaaca cccacccagg nggaaaaatc attctaca 348

<210> 764
<211> 374
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(374)
<223> n = A,T,C or G

<400> 764
agcnaagaag gaagctcctg cccctcctaa agctgaagcc aaagcgaagg ctttaaagnc 60
caagaaggca gcgttgaaag gtgtccacag ccacaaaaag aagaagatcc ncacgtcacc 120
caccttccng cngccgaaga cactgcgact ccggagacag cccaaatatc ctcggaagag 180
cgctcccagg agaaacangc ttgnccacta tgctatcatc aagtttccgc tgaccactga 240
gnctgccatg aagaagatag aagacaacaa cacacttgtg ttcattgngg atgttaaagc 300
caacaagcac cagattaaac aggctgngaa gaagctgtat gacattgatg tggccaaggt 360
caacaccctg attc 374

<210> 765
<211> 288
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(288)
<223> n = A,T,C or G

<400> 765
aaatacaata attctgttat tgataaaatt taaggcattt tcattgcctt ttgcagattt 60
actcataact acctaacaag gaaagaaggt ataattattt cagattggat tatttattct 120
aaaattaaat tcttcactaa tttattctaa gatgaattta atagtccatc aggaaattgg 180
nttttataaa gcttatttta tggcataaaa atacaggaaa aggtaataat aaatgccaaa 240
ccgtctcttt actttatgaa gccaaatatt tcctcagact tggttttt 288

<210> 766
<211> 424
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(424)
<223> n = A,T,C or G

<400> 766
ttgtggttgt gcctgagggc tctgcttccg acactcatga acaggctatc ttgcggttgc 60
aagtcaccaa tgttctgtct cagcctctga ctcaggccac tgttaaacta gaacatgcta 120
aatctgttgc ttccagagcc actgtcctcc agaagacatc cttcacccct gtaggggatg 180
tttttgaact aaatttcatg aacgtcaaat tttccagtgg ttattatgac ttccttgtcg 240
aagttgaagg tgacaaccgg tatattgcaa ataccgtaga gctcagagtc aagatctcca 300
ctgaagttgg catcacaaat gttgatcttt ccaccgngga taaggatcag agcattgcac 360
ccaaaactac ccgggtgaca tacgcagcca aagccaaggg cacattcatc gcagacagcc 420
acca 424

<210> 767
<211> 302
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(302)
<223> n = A,T,C or G

<400> 767
ggctttctca ataagcctca gctttctaag atctaacaag atagccaccg agatccttat 60
cgaaactcat tttaggcaaa tatgagtttt attgtccgtt tacttgtttc agagtttgta 120
ttgtgattat caattaccac accatctccc atgaagaaag ggaacggtga agtactaagc 180
gctagaggaa gcagccaagt cgnttagtgg aagcatgatt ggtgcccagt tagcctctgc 240
aggatgtgga aacctccttc caggggaggt tcagtgaatt gtgtaggaga ggttgtctgt 300
gg 302

<210> 768
<211> 94
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(94)
<223> n = A,T,C or G

<400> 768
ctgatctaaa agaagttact gaggaagatt tgaataatca ctttaagtct ttgggaagca 60
gnnatttgaa atnttgaggt gacagncttt taag 94

<210> 769
<211> 69
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(69)
<223> n = A,T,C or G

<400> 769
ctgcaagacg actccaaccc aacaacaacc agatgngctn cagcccagcc ggncttcagt 60
tccatattt 69

<210> 770
<211> 222
<212> DNA
<213> Homo sapien

<400> 770
ctgaacgcaa accagccact ttaattaagc taagccctta ctagaccaat gggacttaaa 60
cccacaaaca cttagttaac agctaagcac cctaatcaac tggcttcaat ctacttctcc 120
cgccgccggg aaaaaaggcg ggagaagccc cggcaggttt gaagctgctt cttcgaattt 180
gcaattcaat atgaaaatca cctcggagct ggtaaaaaga gg 222

<210> 771
<211> 332
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(332)
<223> n = A,T,C or G

<400> 771
ctgctttccc tcctatggct cccctggaac aggagggaga gccaaggggg cggcccagcc 60
tggacagcgc ccgctcctgc ctgggtgcac acacggcggg cctgagctcc agcatctgag 120
tttgggggta tgagaaacag gggagcagaa ggagaagaaa actgcctgtg ctgcaacacg 180
tttcctcatt tattttttct ttctttttct ttttttcttt ttttggaggg agaggtccct 240
gcaaggtccc ttcccgggca gnggagggat ggaaatgccg tcacagtagt agggactgga 300
gcgtctacaa ggatggaggg gagctactca gg 332

<210> 772
<211> 194
<212> DNA
<213> Homo sapien

<400> 772
aaaagaaaga tcaattatat ccatgcttaa caggatcagc aggagcttta taaatgactt 60
tacagagact aataagggat ttgatctttc tttttttgtt atcgaggctt ttgaaatgtg 120
gaacttgtgt gttctgcttt atatgttata ttcaatatct tttcagatgc agtctatatt 180
ttatgctgag tttt 194

<210> 773
<211> 272
<212> DNA
<213> Homo sapien

<400> 773
ccaattgatt tgatggtaag ggagggatcg ttgacctcgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg 180
gcatacagga ctaggaagca gataaggaaa atgattatga gggcgtgatc atgaaaggtg 240
ataagctctt ctatgatagg ggaagtagcg tc 272

<210> 774
<211> 314
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(314)
<223> n = A,T,C or G

<400> 774
gtgtcttgta cagttagnta tattagcagc cctctgagat gncgnatcta tcggaaggat 60
ttcaaacacc aattgcttta cctgaacaaa tggnncttac cctttgaaca gcanagngac 120
cacgnagaag gaaggaaaag ggnaaaatcg cttnagttaa actgaaatta aatgaacaat 180
aaggcaacta tataagtnac ttctagnagc attgcctgag anacaaatta ttgtttgata 240
atttncattg tgaatagnaa tccaatagat catattgctt actttgntct ttttatacta 300
tagaataata tttt 314

<210> 775
<211> 207
<212> DNA
<213> Homo sapien

<400> 775
cctgacagag ctcagctcac actgggaagt gtggatgcag ggtgcccttc cctaccccag 60
tgagaaggaa gattccttac ccatcttgct tcccccccag ggaagatcat catgcacgac 120
ccatttgcca tgcggccctt ttttggctac aacttcgggc actacctgga acactggctg 180
agcatggaag ggcgcaaggg ggcccag 207

<210> 776
<211> 196
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(196)
<223> n = A,T,C or G

<400> 776
gtgaacggag gcactgtggc cgagaagctg gactggnccc gcgagaggct tgagcagcag 60
gtacntgtga accaagtgtt tgggcaggat gagatgatcn acgtcatcgg ggtgaccaag 120
ggcaaagnct acaaagggnn caccagtcgt tggcacacca agaagctgcc ccgcaagacc 180
caccgaggac ctcggc 196

<210> 777
<211> 325
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(325)
<223> n = A,T,C or G

<400> 777
aaagttgaac taagattcta tcttggacaa ccagctatca ccaggctcgg taggnttgtc 60
gcctctacct ataaatcttc ccactatttt gctacataga cgggtgtgct cttttagctg 120
ttcttaggta gctcgtctgg tttcgggggt cttagctttg gctctccttg caaagttatt 180
tctagttaat tcattatgca gaaggtatag gggttagncc ttgctatatt atgcttggnt 240
ataatttttc atctttccct tgcggtacta tatctattgc gccaggtttc aatttctatc 300
gcctatactt tatttgggta aatgg 325

<210> 778
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 778
ccaaaagaag taagacagct tgctgaagat ttcctgaaag actatattca tataaacatt 60

ggtgcacttg aactgagtgc aaaccacaac attcttcaga ttgtggatgt gtgtcatgac 120
gtagaaaagg atgaaaaact tattcgncta atggaagaga tcatgagtga gaaggagaat 180
aaaaccattg nttttgtgga aaccaaaaga agatgtgatg agcttacnca nanaaatgag 240
gagagatggg tggcctgcca tgggtatcca tggtgacaan agtcaacaag agcgtgactg 300
ggttctaaat gaattcaaac atggaaaagc tcctattctg attgctacag atgtggcctc 360
cagagngcta gatgtggaag atgngaaatt tgtcatcaat tatgactacc ctaactcctc 420
a 421

<210> 779
<211> 330
<212> DNA
<213> Homo sapien

<400> 779
ctgaactttc cgcttacgct gcccagagct gccaggtgta gactgagaat tcgagttttg 60
tttcttcctt ggggttgtat ctgcagcctt ttctccctgg gactccctgt ctgctgccaa 120
tggagttgaa gaactggaat gatgacacag ctcctcttct cttattttct ttgctggcct 180
ctccggtgtc tgggagcggg aggaggcttg ggctagagaa gggtgatgaa ctggggccat 240
ttctcttcca gagctgtgag atgcctcgag tggagctgta ggaactggta atggcattgc 300
ggctggagct agggatgcca cttgcgtaag 330

<210> 780
<211> 279
<212> DNA
<213> Homo sapien

<400> 780
gagaggtaga gttttttcg tgatagtggt tcactggata agtggcgttg gcttgccatg 60
attgtgaggg gtaggagtca ggtagttagt attaggaggg gggttgttag ggggtcggag 120
gaaaaggttg gggaacagct aaataggttg ttgttgattt ggttaaaaaa tagtagaggg 180
atgatgctaa taattaggct gtgggtggtt gtgttgattc aaattatgtg ttttttggaa 240
agtcatgtca gtggtagtaa tataattgtt gggacgatt 279

<210> 781
<211> 323
<212> DNA
<213> Homo sapien

<400> 781
ttgatcttct gcaggaaggt gcagcttttc catatcagct caaccacgcc gccagtccat 60
tcttaaggaa ctgccgacta ggactgatga tgcattttag ctttgagctt ttgggggtta 120
ttctaccaac aaacagtcca ttggaaagaa aacagtccct ggaattaaca gattagaatg 180
ttcacactgg ttaatctttt tttaacaatg agcatgaagg tagcagaagc tggtgtgttt 240
ccagatggtt cttctaacca aactaatttt tcactgttga caagcgaggc aagggttgca 300
ctggaccaaa ggctgaggct tgg 323

<210> 782
<211> 264
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(264)
<223> n = A,T,C or G

<400> 782
ttctagcttt gccctcactc cccggaaaaa ctgacactga cacaggngct ctttccttgc 60

ccctttagnt ggtacctcag tggggaggct tccttaccaa gaatgagttc ctgaaaccca 120
gggccagaga caaggacaac ttaggggaag acggggtttt cggtggagcc aggggcaaat 180
cttaatggga ccagnggggg ataccccaga gcccatggcc tgactgcaca gcctgcctgg 240
aggatgggtg cgcagttctg cnct 264

<210> 783
<211> 159
<212> DNA
<213> Homo sapien

<400> 783
ctgtgtgaag gcgacagtgg tgcaggtctt cctgtggact agacgtccca gtcttgcctt 60
tcccttgata atgcagtaag ggacccccat tttacgacac agggcaggca agaagacaac 120
cagctcgatg ggatccacgt cgtgtgcaat caccaccag 159

<210> 784
<211> 128
<212> DNA
<213> Homo sapien

<400> 784
ctcggccctc ttacaccatt ttgtttgatt gtctagtccc tgtttctttt tctttctaat 60
ccttattcat ttaagcaaaa ccatacatta tcttttccag tcctttcttg tattcttact 120
gttttttt 128

<210> 785
<211> 346
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(346)
<223> n = A,T,C or G

<400> 785
ctgggctgat gctggaactc gtagaagtac acaggggccc gggaacactg aaaatgtgct 60
acttggagtg cagggatcac aaacatggag tccgccatca tctcctggaa ctgcgcttgg 120
agggtctggg gatccccatt gnccccaatg tactcctccc tcagcaggtc accaaatgta 180
ggaggcaaca tcagcagcgt taacattttc tgcagagcag cctgggaggc ctctctgtcc 240
atttccttct gggtatcata gatcctcatg accttgggga tgagccagcc gaattcattg 300
ttgttgacac caacaatgct agngnacagn ctgaaagtcg gcagag 346

<210> 786
<211> 118
<212> DNA
<213> Homo sapien

<400> 786
ctgcactgat ctgtggggag agttttacag acttttcatt ccagcctcct ccattgacag 60
tgaggtcttc attcaatcct gaagaaacct gaagtgtaga atctcctttt ccagattt 118

<210> 787
<211> 257
<212> DNA
<213> Homo sapien

<400> 787

cactcattca tcgacctccc caccccatcc aacatctccg catgatgaaa cttcggctca 60
ctccttggcg cctgcctgat cctccaaatc accacaggac tattcctagc catgcactac 120
tcaccagacg cctcaaccgc cttttcatca atcgcccaca tcactcgaga cgtaaattat 180
ggctgaatca tccgctacct tcacgccaat ggcgcctcaa tattctttat ctgcctcttc 240
ctacacatcg ggcgagg 257

<210> 788
<211> 155
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(155)
<223> n = A,T,C or G

<400> 788
cgcaagagcc tatgnatgtg gnatccagaa ctcngtgngc gcaanccgca gagacccagt 60
caccctggnt gtnctctatg ggccggacac ccccatcatt tccccccag actcgtctta 120
cctttcngga gcgaacctca acctctcctg ccact 155

<210> 789
<211> 382
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(382)
<223> n = A,T,C or G

<400> 789
cctaagtaaa tgaagagctg taccatattc atgtattgga agacaacatt gtaaagatga 60
catggtttac cagattaatc tataaattca atacaaatcc aatcaaaatt tcaatgctct 120
tgggtttgtt tgatttataa attgttggtc taattctaga agtaatatgg aggaacagtt 180
ggctaagaat agccaagaca ctncaaggaa gaacaatttt gtggngatac tggagacaga 240
ggtgaaattg gttacaatta tgacaaaatg tggaggcatc ttggttttta tcagaccttt 300
tcctaaagtt gcaataatca ggactgtact gtactgctac aagattagac aaattgatgt 360
cagtcagaat agaaatcatc aa 382

<210> 790
<211> 273
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(273)
<223> n = A,T,C or G

<400> 790
ggatccgcta cacagtttct gccagtccct gagttgatgc cttttcggct aactcgccag 60
nttatcaatc tgatgttacc aatgaaagaa acggtnctta tgtacagnat catggtacac 120
gcactccgnn ccttccgctc agaccctggc ctgctcacca acaccatgga tgtgtttgtc 180
aagnagccct cctttgattg gaaaaatttt gaacanaaaa tgctgaaaaa aggagggtca 240
tggattcaag aaataaatgt tgctgaaaaa aat 273

<210> 791

<211> 344
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(344)
<223> n = A,T,C or G

<400> 791
aaagaatcag caaaatttca aataaaaaat tatgaaaata ttatcctcat tagttcattt 60
agtcccatga aattaattat tttctctgct tgatcttggn ggacagtttc atgaagctgt 120
cagttagttc attaaagttt tggaaattct cagacagtgc agtggtatca gaaacttgta 180
ttcaagagta caggtcagag ccttcttttc ttttcttttt gagatggagt cttgctctgt 240
tgccagactg gagtgcagtg gtgcgatctg ggctcactgc aatctccacc tcccgggttc 300
aagcgattct cctgcctcag cctcccgagt aactgggact acag 344

<210> 792
<211> 227
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(227)
<223> n = A,T,C or G

<400> 792
gacaaacctg aaattgaaga tgttggttct gatgaggaag aagaaaagaa ggatggtgac 60
aagaagaaga agaagattaa ggaaaagtac atcgatnaag aagagctcaa caaaacaaag 120
cccatctgga ccagaaatcc cgacgatatt actaatgagg agtacggaga attctataag 180
agcttgacca atgactggga agatcacttg gcagngaagc atttttc 227

<210> 793
<211> 328
<212> DNA
<213> Homo sapien

<400> 793
aaacaagtca tttttcttga tcgttgtgga aggtttggag ccttagaggt atgtcagaaa 60
aaatatgttg gtattctccc ttgggtaggg ggaaatgacc tttttacaag agagtgaaat 120
ttaggtcagg gaaaagacca agggccagca ttgctacttt tgtgtgtgtg tgtgggtttt 180
gttttgtttt tttggttggc cggttgtttt cgttgttgtt aacaaaggaa tgagaatatg 240
taatacttaa ataaacatga ccacgaagaa tgctgttctg atttactaga gaatgttccc 300
aatttgaatt tagggtgatt ttacctgc 328

<210> 794
<211> 290
<212> DNA
<213> Homo sapien

<400> 794
ccagcgagca catgaagcgg ttcttcatga actttgtggt tgggcaggat ccgggctcag 60
acgccgcctt ccacttcaat ccgcggtttg acggctggga caaggtggtc ttcaacacgt 120
tgcagggcgg gaagtggggc agcgaggaga ggaagaggag catgcccttc aaaaagggtg 180
ccgcctttga gctggtcttc atagtcctgg ctgagcacta caaggtggtg gtaaatggaa 240
atcccttcta tgagtacggg caccggcttc ccctacagat ggtcacccac 290

<210> 795
<211> 343
<212> DNA
<213> Homo sapien

<400> 795
aaaatcaaag aaatccttgt tttgaaaatt ggatcttaat ctcaaaattg tagaacttgg 60
ctgagaccat tgctttcatt ttgaaaatga acttcaactc cagaaagacc agtgtgtgct 120
ctgccaaata aatttctgag tcacagtctc actaggaatg tgcaaatcaa agcatatgtt 180
ggtgtaaatt cttttgaagt ccttgccaag ataatcaatg gcatttacat ttgctttttt 240
ctttaataaa aattccacca ttttcacttt tcttcgactc acagcaagta acagtggctg 300
atattcattc ttgctgcatt cttcaatatt tgtaccatgt gaa 343

<210> 796
<211> 354
<212> DNA
<213> Homo sapien

<400> 796
tggcgggccg ctgaataagc ttccaaaatg atgcccacac cagttattct attgaaagag 60
gggactgata gctcccaagg catcccccag cttgtgagta acatcagtgc ctgccaggtg 120
attgctgagg ctgtaagaac taccctgggt ccccgtggca tggacaagct tattgtagat 180
ggcagaggca aagcaacaat ttctaatgat ggggccacaa ttctgaaact tcttgatgtt 240
gtccatcctg cagcaaagac tttggtagac attgccaaat cccaagatgc tgaggtgggt 300
gatggcacca cctcagtgac cttgctggct gcagagtttc tgaagcagac ctgc 354

<210> 797
<211> 309
<212> DNA
<213> Homo sapien

<400> 797
ctgtgccgtc tgcctgagcc catggatgct ttctcaatcc taggctggtt actgtgtaag 60
cgttttggag tacggggcct tgagcgggtg ggagctgtgt gttgaagtac agagggaggt 120
tggggtgggt cagagccgag ttaagagatt ttctttgttg ctggacccct tcttgaaggt 180
agacgtcccc cacccggaga gacgtcgcgc tgtggcctga agtggcgcaa gcttgctttg 240
taaatatctg tggtcccgat gtagtgccca gaacgtttgt gcgaggcagc tctgcgcccg 300
ggttccagc 309

<210> 798
<211> 315
<212> DNA
<213> Homo sapien

<400> 798
ccaccagcat tgacgttctt gccatccaga agagctgaca gtgtcagttt aatacctggc 60
tttagagtct gagtgtatcc taaacctatc aggctggagt tgttcacttt agccgagaag 120
caggcgtcag ggtcaatctg atacttggct gctattccga agcgcgtgtt actgtttcct 180
gctgtccagg caagattgac agcggtctcc aacttcttgt tcactttctg gtaaatggag 240
ccgccaaact ctgtcccgtc attcacatta gtgtgaagct ggaattcatc agtcttgtag 300
ccaactgcaa agttg 315

<210> 799
<211> 157
<212> DNA
<213> Homo sapien

<400> 799

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ctgtgatttc ctccatagtt ggcttctggg tcaggccata ggcaatattt tcttgaagac     60
ttcttccaaa tacctgtggc tcttgtccca ctgcagccac ctgcctgtgc aggtagcggt    120
gctcatattg gggaaggggc ttcccatcca acagcag                             157

<210> 800
<211> 357
<212> DNA
<213> Homo sapien

<400> 800
aaactcagtg aacccaaacc tattttttc aatctgaata ttgctgcagc aaaaccaact     60
ccaccaaaaa gccgggtaac attaacaaaa gaattccctg tatcatctgg atctcaacat    120
cggaaaaaag aagcggatag tgtttatgga gaatgggttc ctgtcgagaa aaatggtgaa    180
gaaaacaaag atgatgataa tgttttcagc agcaatttgc cctcagagcc tgtggacatc    240
tctacagcaa tgagtgaacg ggcacttgct cagaaaagac tcagtgagaa tgcatttgat    300
cttgaagcca tgagcatgtt aaatagagct caggaaagga ttgatgcctg ggctcag       357

<210> 801
<211> 359
<212> DNA
<213> Homo sapien

<400> 801
cctagggggc atatcaaggg tttaatagac tgggggaatg ggcaacagaa ctggctacct     60
tagaggctct ggaatgcccc ccacccatcc acccaccaat ggaaggaaag tcaggcatcg    120
cctaaaagga gtggtcccta tctagcccca agtctggagc agaaagggca ggtccattct    180
ggcccaagtg acattgttag atcctgtccc ctcccccaat cactgctgct tgccagggtg    240
cctcttcaca gttcccatgt ggcagcagta gtggcagagg cagaagtgga cttattgtag    300
attgcagtac agatacatgg acacaatcat ggcagccagc tcgaggcccc caattccag     359

<210> 802
<211> 207
<212> DNA
<213> Homo sapien

<400> 802
ccaggctcgg gcaccacctc aatcacatcc atgatcaaga tccgccctcg gcacgtgacc     60
tcctccccct gcatgaggca ggtcccggcg gccacgtagc ctttgaggcc cgacacggtc    120
tcctcactgc gcagagacac tgtcttcatg caggtcacat gctcccactc ctgcagctcg    180
atcctggcat tgggaatagc ctcccag                                        207

<210> 803
<211> 311
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(311)
<223> n = A,T,C or G

<400> 803
cctatttcac tgctgtgtag cctcagtgcc taacatgggt gccaaataaa tattcgtaga     60
attacactga attgtaaaaa ccattcgntt ttgnttacaa ttgccaaaaa tctcaaaagg    120
ccctgtattt atgtaattct ttgaaattat tattttattt tgatttctca gttattgact    180
ggctgggngt gacttagtac ataagtactc aatattatna aaacctcaaa taattgactt    240
gattttacac aacatccttc ccttttctac aagntaattt ttttacaaat catttgggtt    300
atctcctaaa t                                                         311
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<210> 804
<211> 202
<212> DNA
<213> Homo sapien

<400> 804
ctgttcggat ttaacttcat cttctggctt gccgggattg ctgtccttgc cattggacta 60
tggctccgat tcgactctca gaccaagagc atcttcgagc aagaaactaa taataataat 120
tccagcttct acacaggagt ctatattctg atcggagccg gcgccctcat gatgctggtg 180
ggcttcctgg gctgctgcgg gg 202

<210> 805
<211> 238
<212> DNA
<213> Homo sapien

<400> 805
ccaaccagtc tggctggagt gatgcattcc tggcccagca cacgatgctt accctggatc 60
ccaacgtcac cggtgtcttc ctgggaccct acccctttgg catcgatcct atttggagcc 120
tggctgccaa ccacttgagc ttcctcaact ccttcaagat gaagatgtcc gtcatcctgg 180
gcgtcgtgca catggccttt ggggtggtcc tcggagtctt caaccacgtg cactttgg 238

<210> 806
<211> 325
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(325)
<223> n = A,T,C or G

<400> 806
cctgaggtct gcggaaggtg ggaggaggca gacgccctgc gtggcccatg gtcggggcgt 60
ccacgccgag gccggcaaca aacgacagta tctcggattc cttttttttt taattttta 120
tactttggng tttcacttcg ngctctgaat actgaataac catgaatgac tgaatagttt 180
agtccagatt tttacagagg atacatctat ttttatcatt atttggggtt tgaaaaattt 240
ttttttacac cttctaattt ctttatttct caaagcagat aattcttctg ngtgaaaatg 300
ttttcttttt ttaatttaag gttta 325

<210> 807
<211> 289
<212> DNA
<213> Homo sapien

<400> 807
cctaaaggga actgtcttct gtcgagaagt aaaggaaact tcatgaagga tgtagaagct 60
tagctgcctc agagaagaga gaacctgaag atctgaggca agctggacag gagaggtaga 120
tatttgttga tggaagaatt caagtttata atcaattccc acttagcacc tactgtgtgc 180
taggaacttg aatgtgtatg tttgacaagt cctgcttggc ctgatgggtg ggagaaggaa 240
cctgagcctg gctgagatgg ctaggcggag ggctttgaag tccaagcag 289

<210> 808
<211> 376
<212> DNA
<213> Homo sapien

<400> 808
aaacttaatt aaagagcttg acaagctctg catattcatg tgtcataagc agtatgtgac 60
aaaaaaaact gtgcagtatg tacccctca cgaaatttag tttggcaggg aaaacaagat 120
gcacatgtta ttataaatta gaaaatggaa gagaagtaga aataaatcca tgagtattat 180
atataagtaa cagaacaaaa acaacaggat aatgtatccc ccccaaaggc ccagtagaga 240
ccatcaaagc tcattctggg ggtagtcaag gagggagtgg agggagaaaa agaacgcaga 300
ccttcaacca ctaatgaaag aactgaaaca tctgtatgta gaaaaaaggt aaaatcaact 360
cactatcatc ttcagc 376

<210> 809
<211> 243
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(243)
<223> n = A,T,C or G

<400> 809
ccatctcatt ttcaaagtnc agagctacat aacacagttt ctccttgatg tcccggacaa 60
tctcacgctc agcagtagta acgaaggaat agccacgctc agtcaggatc ttcatgaggt 120
agtcagtgag atctcggcca gccagatcca gacgcatgat gncatggggc aagnnatagc 180
cntcatagat ggngacantg tgggtgacac catctccaga gtccagcacg atgccagttg 240
tgc 243

<210> 810
<211> 274
<212> DNA
<213> Homo sapien

<400> 810
aaaaaacacg tttgttatta ccaaaaagag acgtctttag gtaaaaataa taaaaacccc 60
atgctgcatt gataatgcag atagttctat ttatctggtc aacgggcaaa aagcaagcac 120
tttaggtctt cagctccaat cttttgttca tttcttattg ctggaatttc atatttcttc 180
ttgttggatg actaaaccgg atgatggtag agatggtaag ccggcattta ctcagccccg 240
ccctgctcag cctcgggagc ggacgaattc tcag 274

<210> 811
<211> 205
<212> DNA
<213> Homo sapien

<400> 811
ctggtggaga tcatcaaggt gctgggaaca ccaacccggg aacaaatccg agagatgaac 60
cccaactaca cggagttcaa gttccctcag attaaagctc acccctggac aaaggtgttc 120
aaatctcgaa cgccgccaga ggccatcgcg ctctgctcta gcctgctgga gtacacccca 180
tcctcaaggc tctccccact agagg 205

<210> 812
<211> 199
<212> DNA
<213> Homo sapien

<400> 812
aaatattgct gctgctttgt agatgatgag aagaaatgtt aaagtgcttt ctaaaaggaa 60
attttttcac ctttggagga gaatatatta gagttgtggg taatttttca cagccaccta 120
tgtacatact aattacccat tggatactta tatctaaaag tctcatgctg aagtatagtt 180

tttgggaaag aatgatttt 199

<210> 813
<211> 334
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(334)
<223> n = A,T,C or G

<400> 813
cctcaccgcc gatgcaagga tagtcatcaa cagggcccgn gtggagtgcc agagccaccg 60
gctgactgtg gaggacccgg tcactgtgga gtacatcacc cgctacatcg ccagtctgaa '120
gcagcgttat acgcagagca atgggcgcag gccgtttggc atctctgccc tcatcgtggg 180
tttcgacttt gatggcactc ctaggctcta tcagactgac ccctcgggca cataccatgc 240
ctggaaggcc aatgccatag gccggggtgc caagtcagtg cgtgagttcc tggagaagaa 300
ctatactgac gaagccattg ctctgcgacc tgcc 334

<210> 814
<211> 358
<212> DNA
<213> Homo sapien

<400> 814
ctgaagcttg gaacttctgg acaagaaaag gcctggtttc tggtggcctc tatgaatccc 60
atgtagggtg cagaccgtac tccatccctc cctgtgagca ccacgtcaac ggctcccggc 120
ccccatgcac gggggaggga gataccccca agtgtagcaa gatctgtgag cctggctaca 180
gcccgaccta caaacaggac aagcactacg gatacaattc ctacagcgtc tccaatagcg 240
agaaggacat catggccgag atctacaaaa acggccccgt ggagggagct ttctctgtgt 300
attcggactt cctgctctac aagtcaggag tgtaccaaca cgtcaccgga gagatgat 358

<210> 815
<211> 203
<212> DNA
<213> Homo sapien

<400> 815
ctggaagccg gactcagcca gggtgcgcta ctaccagagc ctgcaggctc atctcaaggt 60
ggacgtgtac agacgctccc acaagcctct gcccaagggg accatgatgg agacgctgtc 120
ccggtacaag ttctacctgg ccttcgagaa ctccttgcac cccgactaca tcaccgagaa 180
gctgtggagg aacgccctgg agg 203

<210> 816
<211> 92
<212> DNA
<213> Homo sapien

<400> 816
cggccgcaga agcgagatga cgaagggaac gtcatcgttt ggaaagcgtc gcaataagac 60
gcacacgttg tgccgccgct gtggctctaa gg 92

<210> 817
<211> 367
<212> DNA
<213> Homo sapien

<400> 817
ttggaggact atttgaattt tgcaaactat ctcttgtggg tttttacacc actaatactt 60
ttaatacttc cttactttac tatctttctt ctctacctta ctattatttt cttacacatt 120
tataagagaa agaatgtatt gaaagaagcc tactctcata atttatggga tggtgcaagg 180
aaaacagtgg caactctgtg ggatggacat gcagccgttt ggcatggtta tgaagttcat 240
ggaatggaaa aaataccaga agatggacca gcacttataa ttttttatca tggagctatt 300
cctatagatt tttactattt catggctaaa atatttatac acaaaggcag aacttgccga 360
gtagtag 367

<210> 818
<211> 381
<212> DNA
<213> Homo sapien

<400> 818
aaataaaagt attacgtaac tttgaaattt gtataaaatt aaaagatagt aaaaacaact 60
attctaacag aattcaaaac ctgttatgct tcagtggaga gattattcaa gataagtccg 120
tgggaaattg ggagtacatt tctactggca aagttagtga taactatgca cttctgacaa 180
aatgtgaaat gggggtatg ggcgtgtcat atcatcatgg tgcagatacg tggatgtgtg 240
cttccaaaca atggcaacct aactgactgc tggaaccata caaaatacct gaaactactc 300
agaaagaagg tgaaaattgc atgcaaaaat tatttgaaaa atattgagct aacacaacat 360
gaatttggaa ttataagtga g 381

<210> 819
<211> 109
<212> DNA
<213> Homo sapien

<400> 819
ccatggccgc ttccagacca tggaggagaa gaaagcattc atgggaccac tgaagaaaga 60
ccgaattgca aaggaagaag gagcttaatg ccaggaacag attttgcag 109

<210> 820
<211> 309
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(309)
<223> n = A,T,C or G

<400> 820
ctggaaaaac ctttcagcga accatttcag ctcaggacac gttagcgtat gccacagctt 60
tgttgaatga aaaagagcaa tcaggaagca gtaatgggtc ggagagtagn cctgccaatg 120
agaacggaga cagncatcta cagcagggtt cagaatctcc catnatgatt ggtgagttga 180
gaagngacct tgatgatgtt gatccctaga ggaacatgcc cagcctgaga ggagncaaga 240
cacaatactg gatgctcagc accttctttg gaatcagaat ctcgaaccct ntggaagagc 300
ctgnagatt 309

<210> 821
<211> 236
<212> DNA
<213> Homo sapien

<400> 821
catccgcttc ctgaatgctg agaatgcaca gaaattcaaa acaaagtttg aagaatgcag 60
gaaagagatc gaagagagag aaaagaaagc aggatcaggc aaaaatgatc atgccgaaaa 120

agtggcggaa aagctagaag ctctctcggt gaaggaggag accaaggagg atgctgagga 180
gaagcaataa atcgtcttat tttattttct tttcctctct ttcctttcct tttttt 236

<210> 822
<211> 388
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(388)
<223> n = A,T,C or G

<400> 822
gcgaggcaag atggagttag tgcaggtcct gaaacgcggg ctgcagcaga tcaccggcca 60
cggcggtctc cgaggctatc tacgggtttt tttcaggaca aatgatgcga aggttgntac 120
attagtgggg gaagacaaat atggaaacaa atactatgaa gacaacaagc aatttttttgg 180
ccgtcaccga tgggttgtat atactactga aatgaatggc aaaaacacat tctgggatgt 240
ggatggaagc atggtgcctc ctgaatggca tcgttggctt cacagtatga ctgatgatcc 300
tccaacaaca aaaccactta ctgctcgtaa attcatttgg acgaaccata aattcaacgn 360
gactggcacc ccagaacaat atgtacct 388

<210> 823
<211> 353
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(353)
<223> n = A,T,C or G

<400> 823
aaaagtttgg atctttttct cagcaggtat cagttgtaaa taatgaatta ggggccaaaa 60
tgcaaaacga aaaatgaagc agctacatgt agttagtaat ttctagtttg aactgtaatt 120
gaatattgtg gcttcatatg tattatttta tattgtactt ttttcattat tgatggnttg 180
gactttaata agagaaattc catagttttt aatatcccag aagtgagaca atttgaacag 240
tgtattctag aaaacaatac actaactgaa cagaagtgaa tgcttatata tattatnata 300
gccttaaacc tttttcctct aatgccttaa ctgtcaaata attataacct ttt 353

<210> 824
<211> 264
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(264)
<223> n = A,T,C or G

<400> 824
ctgggtgcag gcgggctgag tccgaaaaga gagtcagcaa agggagatgg ggtggggccg 60
ttttatagga ttagggaagg taatggaaaa ttacagtcaa agggggtttg ttctctggtg 120
ggcaggtgtg gatctcacaa agtacactct caagggtggg gagaattaca aaggaccttc 180
ttaagngtgg gggagattac aaagtacatt tatcagttag ggnggngcag gaacaaatca 240
caatgttgna atgtcatcag ttaa 264

<210> 825

<211> 361
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(361)
<223> n = A,T,C or G

<400> 825
aaaatccagt ttgttgttaa caaaacctac tgctgggtgg ttttgaatat attactttta 60
ggcatgatct ccccaatgtg tttttactcc ttttccggct tctaggacag aggtatgtag 120
tcaaagaatc ctatggtgga tctgaattgg gtttcagcta ctgtacctgg tccttgtgaa 180
ttaaaaaaat aaagtcacaa aaaccatatn acaaaacaaa ttaaaataaa tagacaaaat 240
gaagctgtct ccagaccttc tgcattgaca cacaggtttg aagtcaacca aagcactcat 300
gctaatctgg atgggaacac tagggagaca gaaaccccag tatgaaacca tgtacttgag 360
c 361

<210> 826
<211> 195
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(195)
<223> n = A,T,C or G

<400> 826
ccccagaagn gacgcagccc tctatnggcc cnaatcttct tcantcgctc caggtcttca 60
cggagcttgt tgtccagacc attggctagg acctggctgt attttccatc ctttacatcc 120
ttctgtctgt tcaagaacca gtctgggatc ttgtactggc gnggattctg cataatggng 180
atcacacgtt ccacc 195

<210> 827
<211> 227
<212> DNA
<213> Homo sapien

<400> 827
caacggctct tcacagacca cctcctttc taaggaaaat ggctggtatg acgtgatgag 60
tgatacatat tttgattcag gttttgtctc taaagtagca cttcttacca cagagatcaa 120
ggacttgggt aatattatgc ttttttcctt caatggatta attttcttaa tataaaaaca 180
gatgaatacc aggctaagca ctagaaagag tagtaaagca gcaacaa 227

<210> 828
<211> 242
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(242)
<223> n = A,T,C or G

<400> 828
atgtccgggg agtcagccag gagcttgggg aagggaagcg cgcccccggg gccggtcccg 60
gaggntcgat ccgcatctac agcatgaggt tctgcccgtt tgctgagagg acgcgtctag 120

tcctgaaggc caagggaatc aggcatgaag tcatcaatat caacctgaaa aataagcctg 180
agtggttctt taagaaaaat ccctttggtc tggngccagt tntggaaaac agtcagggtc 240
ag 242

<210> 829
<211> 374
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(374)
<223> n = A,T,C or G

<400> 829
gaggtcctga aaaggaatac acttccatat catgccatct cttacactgg cattccttgc 60
ctatgcatgt gcatggcttg ccctggttta gcttggaaac tgattgaaag tcagagagat 120
cactggcttt gagacttgct tgggggactt gggtagcgtc agaggagtct tccttcttac 180
tctctgatgg gagccttgga acagaagttc tcaaaggctc aacgactgcc cctgcgtgat 240
tagcatcgag agaagtagag ctttctcctg cactgaactc tttaggggat gaaattccca 300
gcccactgct gccatcaggt gagtcagtct ggcttttgng cttgagttga ctgctggaag 360
aagacgctat tgta 374

<210> 830
<211> 325
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(325)
<223> n = A,T,C or G

<400> 830
gttcaaagca gaaaatcctg agcctctagt gtttggtgtg aagtacaatg caagttcttt 60
tgccaagttc acgcttattg tgacagatgt gaatgaagca cctcaattct cccaacacgt 120
attccaagcg aaagtcagtg aggatgtagc tataggcact aaagtgggca atgtgactgc 180
caaggatcca gaaggtctgg acataagtta ttcactgagg ggagacacaa gaggttggnt 240
taaaattgac cacgtgactg gtgagatctt tagtgtggct ccattggaca gagaagccgg 300
aagtccatat cgngtacaag tggtg 325

<210> 831
<211> 85
<212> DNA
<213> Homo sapien

<400> 831
tggtaccggg cccccccct gagcgatgga gcgtgggtag ggagggtcca cagtgtccac 60
tcgccgtgtg cgaaggttga ctcgg 85

<210> 832
<211> 202
<212> DNA
<213> Homo sapien

<400> 832
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt 60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt 120

gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacctc 180
tcctgccgtc gacgcggccg cg 202

<210> 833
<211> 503
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(503)
<223> n = A,T,C or G

<400> 833
ccggctggtc ctgcatcgcc atctgctggc cgcgcggcac ggccggttcc tggagccagc 60
aggagtcgga ggctgcaggg cttgaaggcc tcttcaccgt gccctccagg gagcctagct 120
gccgaagtat tcctgctgga acttctggaa gtcttcctcg gtgaacacgg tgccctcagc 180
cttcttcttc ttggtcttgg ccacaggccg gtcacaggcc ttgcggcccc ggttctggcg 240
caaaatctgc tggctcacag actcagccac ggtgcttctc gtcctggtca gaaacttcag 300
gtttactctg aggtggtctc gacactctcg cttccggtac tcgtccagtg ccgacttggg 360
cacctttccc ttggccgagt tccgcagttt ctgggcctga attgccttcg tcttccgggg 420
ccgtttcacc gganccccctc tcggcttggc ctgacctgga gggtcccggg gggcctngga 480
cgccgccagc agctncaggc ccc 503

<210> 834
<211> 208
<212> DNA
<213> Homo sapien

<400> 834
atccagagac aatctgccgg ttgtcagagg agaaggccac actcagcaca tccttggtat 60
ggcccacaaa tcgcctcgtg gtggtgcccg ttgtgagatc ccagaggcgc agggttccat 120
cccaggagcc tgagagggca aactggccat ctgaggagat aaccacatca ctaacaaagt 180
gggagtgacc ccgcagagca cgctgtgg 208

<210> 835
<211> 210
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(210)
<223> n = A,T,C or G

<400> 835
tgatgtgggc gattgatgaa aaggcggttg aggcgtctgg tgagtagtgc atggctagga 60
atagtcctgt ggtgatttgg aggatcangc aggcgccaag gagtgagccg aagtttcatc 120
atgcggagat gttggatggg gtggggaggt cgatgaatga gtggttaatt aattttatta 180
gggggttaat tttgcggtcg acgcggccgc 210

<210> 836
<211> 426
<212> DNA
<213> Homo sapien

<400> 836
cggccgccac gctggttttg catcttcagg agacgctcgt agccctcgcg cttctcctcg 60

gccaattcgc ggaagaagtg gctcacgcct tccagagcca catcatcgcg gtcgaaatag 120
aagcccagag agaggtaggt gtaggaggcc tgcaggtaca aattgaccag gctgttgacg 180
gctgcctcca cgtcggtgga ataattctga cgaatctggg agctcatggt tggttggcaa 240
gaaggagcta accacaaaaa cggtgctggc aggtcccaga agcaggagat ggccgagaag 300
atggtcccgg aggttgcaag cggagaggaa atcggagggc ggtcggaggc tggaagagag 360
tccccggatc tgttccgtcc aaacactgtt gaagcaagag acagacccgc ggtcgacgcg 420
gccgcg 426

<210> 837
<211> 134
<212> DNA
<213> Homo sapien

<400> 837
ccagggccgt gggccgaccc cggcggggcc gatccgaggg cctcactaaa ccatccaatc 60
ggtagtagcg acgggcggtg tgtacaaagg gcagggactt aatcaacgca agcttatgac 120
ccgcacttac tggg 134

<210> 838
<211> 538
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(538)
<223> n = A,T,C or G

<400> 838
ggcgtcctgg tgcttaccac ctggaaactg gtgaggtggt gggagaactc ctggtggacc 60
ctagtggaag ccttccagta atttcttgaa gctgagcgct caggtgagta gggcgacatc 120
tggtggccgg ttgttgaagg tcattgcaga gaggaaggaa gccgaggagg ggagcctgca 180
gtgagggcgt cctggggttc tccggttctc accacccttg ggccacgccg tctagtccac 240
acctgaggag ttggtcaggt agaaggggcg gatgaccgtg cggaagccgt tgaagtgccc 300
tgccgggcag gggaaggagg aggtgctctt cgagctgttg gtgtccaggg cactgggaat 360
cgcagccttc cagccctcga aatcggtgac gtctgccacg aagagccctt cgcagagcat 420
cagggctttg ttttcgtagg caatggtgcg atctgagccg ccagacttgg tgaggcccan 480
gacagggagc tcgtccgagg agcaggagaa gccgtagttc cagcagctct ggatggtg 538

<210> 839
<211> 351
<212> DNA
<213> Homo sapien

<400> 839
aaggcggcaa cggtggtgaa agatatagca ggcctggtct ttgtacagcg gatgctcgtg 60
aagaggggc gagcggtaga accttgggtc cttgtagccg cggtcccagg gcggaaagat 120
cggccgcgcc agccagggca cgaagtgcat cttccccgca aaggtgatgg gctccagtcc 180
agggatctcg taccccctat ccaggggagg aggctccgac ttccgcgtgg agcgcacgcc 240
ccactcatac gccccgcgtc tcggggcccc gaagccccca aggccgagct gcccggagcc 300
agctagcgcc cgccttgcgg gcccggacgc caatgccata ccgatctgat a 351

<210> 840
<211> 574
<212> DNA
<213> Homo sapien

<400> 840

tggcctgcaa ggccgcggac agggcgagca ccgagtcgta cattttgcag ctcatcatcc 60
ccgtgctctg cgtgacgcag tccatccaca gccccttgta catggcctgg gccgtgatga 120
tgttgtcacc cgcataggag ctcatctgcc actgcgggat ggcggtgcag gccaccagac 180
ccacccagcc cagcagggcc atggagaagc ccagcaactg caggcccgaa ttggccattt 240
ccgccctcag aaaacactgg gggcgccggg cgggagaccc tacagtaaaa caaacgacac 300
ttgggggca gccccacaaa agaaaacttg aggtggagtt ttccggtcac ccaaagagac 360
aaaaagggtt tgggccaggt gaatgcaaat cttgtcacca aactacacac aaatcgaccc 420
ctccagtgaa gcgatggcct cgcggcacag ggagtaggat acgccgggag ggtggttcca 480
gacaaaattg gtggtccccg aaggccaggc ggttccctcc ggcgctctcg gcgaccctag 540
gcaaacaaaa ggtggagggg ccgtctgggc gcgt 574

<210> 841
<211> 195
<212> DNA
<213> Homo sapien

<400> 841
gacccagggg cacaggctcc cagatgatag cccctctctg aatgagcacc caggcaacac 60
agtccggggc tgtgtgtagc aaacctgtca gcagctgcct cctgggacaa ccacccccctt 120
acatgctatc tatctaccag acaaatgaaa gctcttctta ccccatctcc caggcacccc 180
ccagcaaggg ctctg 195

<210> 842
<211> 207
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(207)
<223> n = A,T,C or G

<400> 842
cggccgccct tttttttttt ttttcgttga aaaccaataa tttatcaaaa cgctgcgtgt 60
gtatgtgggg gggagggtgt cacancncnc agggcagcgg ngggcggacg cacaggcagg 120
aaacggngcc cggaaagnng gggcggnann ttgccactgg ctggccatgc gggcgggcag 180
gctaaacatt nttgccgcgc aggcgca 207

<210> 843
<211> 62
<212> DNA
<213> Homo sapien

<400> 843
cgatggagcg tgggtaggga gggtccacag tgtccactcg ccgtgtgcga aggttgactc 60
gg 62

<210> 844
<211> 118
<212> DNA
<213> Homo sapien

<400> 844
ttgggtacac tccctggtac cgggcccccc cgatccggct gccagccctg aggccaagca 60
cggctggaga cccacgacct ggcctgccgt tgccctgagc tgcagcctcg gccccagg 118

<210> 845
<211> 99

<212> DNA
<213> Homo sapien

<400> 845
gtacactccc ctggtaccgg gcccccccac taccgagtca accttcgcac acggcgagtg 60
gacactgtgg accctcccta cccacgctcc atcgctcag 99

<210> 846
<211> 559
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(559)
<223> n = A,T,C or G

<400> 846
cggccgccct tttttttttt ttttggttgt ggctganaat gctggagatg ctcagttctc 60
tccctcacaa ggtaggccac aaattcttgg tggtgccctc acatctgggg tcttcaggca 120
ccagccatgc ctgccgagga gtgctgtcag gacagaccat gtccgtgcta ggcccaggca 180
cagcccaacc actcctcatc caagtctctc ccaggtttct ggtcccgatg ggcaaggatg 240
acccctccag tggctggtac ccccaccatcc cactacccct cacatgctct cactctccat 300
caggtcccca atcctggctt ccctcttcac gaactctcaa agaaaaggaa ggataaaacc 360
taaataaacc agacagaagc agctctggaa caaaaagtac aaaaagacag ccagaggtgt 420
gcggagaggg tgaggtggcc gcgtggacgt gggtagataa tcgcatgcag cactggaact 480
cctgatgagg ggtggggtcc ccacttctcc tcaaggtttg agggattggg gggagggggt 540
cagctgactc ananaagta 559

<210> 847
<211> 430
<212> DNA
<213> Homo sapien

<400> 847
cggccgccac gctggttttg catcttcagg agacgctcgt agccctcgcg cttctcctcg 60
gccagttcgc ggaagaagtg gctcacgcct tccagagcca catcatcgcg gtcgaaatag 120
aagcccagag agaggtaggt gtaggaggcc tgcaggtaca aattgaccag gctgttgacg 180
gctgcctcca cgtcggtgga ataattctga cgaatctggg agctcatggt tggttggcaa 240
gaaggagcta accacaaaaa cggtgctggc aggtcccaga agcaggagat ggccgagaag 300
atggtcccgg aggttgcaag cggagaggaa atcggagggc ggtcggaggc tggaagagag 360
tccccggatc tgttccgtcc aaacactgtt gaagcaagag acagacccgc gggacgtcga 420
cgcggccgcg 430

<210> 848
<211> 546
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(546)
<223> n = A,T,C or G

<400> 848
agagtaaagt gcagcctctc cagacactgg ggccccagtg ggcgtgggcg aagttgctgg 60
taggaggagt tggcggaagc acttggaact cctttataag tgtcagctgt gagattttaa 120
tttgatttga aaatgagtaa gtgcanaaag acaccagttc ancagctagc aagtcccgcg 180

tcattcagcc cagatattct tgctgacatt tttgaactct ttgccaagaa cttttcttat 240
ggcaagccac ttaataatga gtggcagtta ccagatccca gtgagatttt cacctgtgac 300
cacactgaat ttaatgcatt tcttgatttg aagaactccc taaatgaagt aaaaaaccta 360
ctgagtgata agaaactgga tgagtggcat gagcacactg ctttcactaa taaagcgggg 420
aaaatcattt ctcatgttag aaaatctgtg aatgctgaac tttgtactca agcatggtgt 480
aagttccatg agattttgtg cagctttcca cttattccac aggaagcttt tcagaatgga 540
aaactg 546

<210> 849
<211> 196
<212> DNA
<213> Homo sapien

<400> 849
gaagtccttc agcaggccac gctcggacag ggtgcgcctc aaggacttct ttctgatgag 60
ggggaccttg tacatgatgc actcagagag cgccaccaga cccagcagca gcagccactt 120
catggttctt cccgggtccc aactcgaggg agaaggcgtc gacgcggccg cgaattccac 180
cacactggac tagtgg 196

<210> 850
<211> 543
<212> DNA
<213> Homo sapien

<400> 850
cactgatatt ggagaaaagc acatccggca taaagtgtaa accagtgtct caaacactgg 60
aagaaccggg agagcaaaca tgatttttct tatttcctct aagtaatctt tctttagtaa 120
aacaacaagt gatctttggc atagattcat actttaaagg cattaatatt gcatttatat 180
caggcaagca actatacaaa tatgctgagg gccttgaaaa taatcatcct cattttaaag 240
gaaatagtga aagcctgagt gtaaaggacc aacttaagtt gtacacattc gatgttggga 300
actaacacac agcgatgggt gggaaggaag gatgttcagg caaggttctt actcctttac 360
tcatctggtt ctggctttgg gaaaaaataa ggtttcatgt gctgggaaat acttagcagt 420
aataagtacc aaaaaggaaa cactgccctc tcattttgcc tagtaggaac ttactgtggt 480
gataagaaat atgaaaccca ttactctctt gaaccccata cttgggagta gatgcagaga 540
gct 543

<210> 851
<211> 190
<212> DNA
<213> Homo sapien

<400> 851
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt 60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt 120
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacctc 180
tcctgccgcc 190

<210> 852
<211> 407
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(407)
<223> n = A,T,C or G

<400> 852

aggcctcaca gaggcggggg cagaaggcgg cgacccanag ccgccacatc ccccgccttg 60
ggcgccgtca cagtccccag acgccctgga ctcctgcagt ctacgaagac gcgcggggga 120
cggcgtggtt ccgagagagg gcgccaaagg cgacgtgccg gccgccagct ccaggccgag 180
ccccgagcgc ctgcaggaac aggccccttc acccggcgcg ggacgcagag ctgcgagaga 240
atcttgttca gcgcggactc aacgccaggg cgccgcctag aggttggtct ctgtctcggc 300
ctcacccgcc gggagaccac agagctgctt ccccagccgc ccgccgccag aaattggaaa 360
aaaaaaaatc cagctggggt ctaggaactc ggcttctggc acctctg 407

<210> 853
<211> 626
<212> DNA
<213> Homo sapien

<400> 853
acagtcccag tactctttgc tcagctttcg gggccggcct cgtttccgct tcccgtgctt 60
gggatccccc ttcttgcagt cacgaaaacc atcgctgggg aagagcttgc catcagtggg 120
atccaggtcc acgtcacttc caccggagtc tgaggagtgg gagctccgag aagcaccagt 180
ccctgcggtg gagacgtcag agctgccggg ggaggggct cctgcgccac agctgccggg 240
gtggtagggg ctggcttgct gaccgtcgtc cagcagctcc tgggcaaagg ggctgccctg 300
gtcaaagggc cctgggtcta gggcctcctg gaaggccatg ccatccttct ccagcagctc 360
aatgatccaa ctgagctcat cagaagagct ggaagtgagg tctcgcagct gggcatggag 420
ttggtccccc agaggcccaa agaccagacg cagctcctca agggcacaat tgcagagggt 480
ggcgccatcc atgtcacatc gtgagaagtc aatggcgctt gcgtcgtact tgttcttctc 540
cacttggtag ctgatccagt ccagaacctg cgtcttcgac cagaactggg gctgttcccc 600
caaccagctg gccttctctg taccct 626

<210> 854
<211> 218
<212> DNA
<213> Homo sapien

<400> 854
atgacggctg cccgaagccc cccgagattg cacatggcta tgtggagcac tcggttcgct 60
accagtgtaa gaactactac aaactgcgca cagaaggaga tggagtatac accttaaatg 120
ataagaagca gtggataaat aaggctgttg gagataaact tcctgaatgt gaagcagtat 180
gtgggaagcc caagaatccg gcaaacccag tgcagcgg 218

<210> 855
<211> 50
<212> DNA
<213> Homo sapien

<400> 855
gaggaacgaa gaataaagga gattgtgaag aaacattctc agtttattgg 50

<210> 856
<211> 116
<212> DNA
<213> Homo sapien

<400> 856
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac gccccgcgag cacagagcct 60
cgcctttgcc gatccgccgc ccgtccacac ccgccgccag ctcaccatgg atgatg 116

<210> 857
<211> 402
<212> DNA
<213> Homo sapien

<400> 857
ggcgacgacc ccaagaggga ggtgggccac gatttctact tctttttca ccattcgaca 60
gttccactct tacacggcag ccacatagtg ttcttccatc tagctctcgg actgcatcag 120
ctgcatctcg gggatcttca aattcaacaa aagcaaagcc gggtgggttt ctagcaaccc 180
acacacttcg gagtggtcca tagtagccaa aagcccgttc caattccgtc ttgttgccat 240
tgtttccaag attgcctaca taaaccttac agtccaatgg acaggaatca cgatgcattt 300
cgagatctag ggttaaaaaa tgcggcggct caaatccaca cgctccgatg agtcttcccg 360
ctttcctccg gcccaacacc aaccaacgtc gacgcggccg cg 402

<210> 858
<211> 172
<212> DNA
<213> Homo sapien

<400> 858
acattttatg acctctccca ataggggcag aggtgagcac ccctggtgaa aagttaagac 60
tcagtgagta taaatacgcc aagaagagct gtggcttctt tcactggtgt cctcagaaag 120
gctgtgagca gtgttggtgg catacctgtc acagcatcta gcaaagcacc tg 172

<210> 859
<211> 196
<212> DNA
<213> Homo sapien

<400> 859
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt 60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt 120
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacctc 180
tcctgccgcc ggtcga 196

<210> 860
<211> 538
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(538)
<223> n = A,T,C or G

<400> 860
ggcgtcctgg tgcttaccac ctggaaactg gtgaggtggt gggagaactc ctggtggacc 60
ctagtggaag ccttccagta atttcttgaa gctgagcgct caggtgagta gggcgacatc 120
tggtggccgg ttgttgaagg tcattgcaga gaggaaggaa gccgaggagg ggagcctgca 180
gtgagggcgt cctggggttc tccggttctc accacccttg ggccacgccg tctagtccac 240
acctgaggag ttggtcaggt agaaggggcg gatgaccgtg cggaagccgt tgaagtgccc 300
tgccgggcag gggaaggagg aggtgctctt cgagctgttg gtgtccaggg cactgggaat 360
cgcagccttc cagccctcga aatcggtgac gtctgccacg aagagccctt cgcagagcat 420
cagggctttg ttttcgtagg caatggtgcg atctgagccg ccagacttgg tgaggcccan 480
gacagggagc tcgtccgagg agcaggagaa gccgtagttc cagcagctct ggatggtg 538

<210> 861
<211> 204
<212> DNA
<213> Homo sapien

<400> 861

aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt 60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg acgagagcgt 120
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacctc 180
tcctgccgcg tcgacgcggc cgcg 204

<210> 862
<211> 217
<212> DNA
<213> Homo sapien

<400> 862
aatgtcaggg gtgttggggg ctttggctgg gtcctgggtc ttcgtgtaga gacctggagg 60
cgcttggttc ttggggttct ccaggattcc agcctcgtag ctgatgtgca tgaggttctc 120
atccatgctc cacgggttct tgggagtgac cgggatggga atcccgtgtt gctttgcgta 180
ctccatcagg tcattgcggc ccttgaaccg gttgtag 217

<210> 863
<211> 192
<212> DNA
<213> Homo sapien

<400> 863
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt 60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt 120
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacgtc 180
gacgcggccg cg 192

<210> 864
<211> 147
<212> DNA
<213> Homo sapien

<400> 864
tttccccttg aagaagtaga cccgctcccg gccactgtag ctatgggcag ggagggccaa 60
ggctgcatcc acgttgtccg ggatgccatc gaagccgtca gagatatttc gggggtaatc 120
agggtccagg acaccatcct caaagcg 147

<210> 865
<211> 446
<212> DNA
<213> Homo sapien

<400> 865
cggccgctgg acttggcttg agctgtgagg ggtgggaggg gaggatagca ccggaagatg 60
ctgctccggg cccaacacca gccctggcca ggctctcccc tcccaggggc agcgcccagt 120
ccccaggggc tgccagagcc ctgtgtgcct tgccgcattc ccctgatgca gcttttggca 180
actgaaaggc agggctctcg ctgagtgcac ctggggcttc ctgagcccat ctgcggcggc 240
cccaccctgg cctaggtgct gagtgcagct gctgcagaca gcccctccct ccttagtgga 300
gcctggaggg tggggtgctc ggggatgcag gcaggggcag gggctccaga gccacaggtc 360
agaagcaggg ctgggggagg ggtggagcca ttcagcctca ggcaccctca cagctaggtg 420
actaggggca gggacagaat ggggtg 446

<210> 866
<211> 87
<212> DNA
<213> Homo sapien

<400> 866

tccctcaact ggaccatggg cctgcccacc gacaatggcc acgacagcga ccaggtgttt 60
gagttcaacg gcacccaggc agtgagg 87

<210> 867
<211> 123
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(123)
<223> n = A,T,C or G

<400> 867
cncctggtac cgggcccccc cactttaaaa tcttttgtta agaaatagga aagattagga 60
aatatcatac tgcacctgaa atgctgcagc aggggttttt gtttgcttgt ttttgtcctt 120
cag 123

<210> 868
<211> 634
<212> DNA
<213> Homo sapien

<400> 868
caggctgcgg taggtggcaa tctcctgctc cagccgcgac ttgatgtcca tgagccgctg 60
gtactcctga ttctgccgct cactatcagc tcgcacatcg cccagctggg cttcaatacc 120
gctgatcagc gcctggatat gcgccagctg ggctccaaag cgcgcctccg tttctgccag 180
tgtgtcttcc aaggcagctt tcatgctcag ctgtgactgc agctcaatct caagaccctg 240
aagggtgcgc cgcaggtcag taacctcgga cctgctcatc tggagctgct ccgtgtggcc 300
agcgacctcc cggttcaatt cttcagtccg gctggtgaac caggcttcag catccttccg 360
gttctgctcg gccatgacct catattggct tcgcatgtca ctcaggatct tggcgagatc 420
ggtgcccgga gcggaatcca cctccacact gacctggcct cccacttggc ccctcagcgt 480
actgatttcc tcctcatggt tcttcttcag gtaggccagc tcttccttca ggccttcgat 540
ctgcatctcc aggtcggtcc tggccagggt cagctcatcc agcaccctgc gcaggccgtt 600
gatgtcggcc tccacgctca tgcgcagagc ctgt 634

<210> 869
<211> 197
<212> DNA
<213> Homo sapien

<400> 869
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt 60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt 120
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacctc 180
tcctgccgcc gtcgacg 197

<210> 870
<211> 579
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(579)
<223> n = A,T,C or G

<400> 870

cggccgccct ttttttttt ttttttttt tttttatggg gccaatttta aatagtttta 60
tttaagacat tgcattttcc acttacaata cagtgtttat aaagtgcaat gttatttcct 120
tcccctgtgc atatgttcca tattcaagta ttganaatgc ccagtaactt actatagcag 180
cttaactttt taaaactgcc acagaatttg ctacnaattt aggnccttca aatgttttaa 240
atgtgnggaa caatgctaca tntacacttg gntggcttaa tcaacctntt caatgggggg 300
ccctgaggaa gcnccnccag agggaggagc tccaccacca ggaaatcccc caggcattcc 360
tcctggcatg cctcctgcac tntggtacag cttggtgatg atggggttgc aaactttctc 420
cagctntttc tgntgatgtt caaattcttc cttctcagca gtctgattnt tatcaagcca 480
gnngataatt tcattacact tgtccanaat cttctgtntg ncctcatcgn taatcttgcc 540
ttgaagtttc tcatcttcaa cagntgcttt catgttgaa 579

<210> 871
<211> 518
<212> DNA
<213> Homo sapien

<400> 871
ctttctcctt cttatagacg ttccggacgg gcatgaccgg tccggtcagc tgggtggcca 60
gtttcagttc ttcagcagaa ctgtctccct tcttgggggc cgagggcttc ctggggaaga 120
ggatgagttt ggagcggtac tccttcagcc gctgcacgtt ggcctgcagg gactccgtgg 180
acttgttccg cctcctcgga tccacagaaa tgccgatggt ccgggccacc ttcttgtgaa 240
tgccggccac cctgagctcc tccaggctga agccgcggcc ggcgcgcacc ttcgtgtggt 300
accgaaccgt ggggcagcgc acgatgggcc ggatgggacc cgacgcgggg cgcggggcga 360
tgcggcgcgc cttggcttgc cgggccttac gtctgcggat cttacgggcc ggctggttga 420
accacgtggc cacgcgccgc tgccagtcct tgtggaagtg gggcttcaag accatgccat 480
tccggctggg cgccatggct gcctacggcc ctgcggct 518

<210> 872
<211> 404
<212> DNA
<213> Homo sapien

<400> 872
ctaaacactg tccagcgcag gggggtgcta gggaggtagc gtgacaacac gatggctgcg 60
atgcctgaag tgatgaccac gatggcggaa gtgacagaga ggatgttgac cacgcagtac 120
tgcagagcca ccgcatcttg aggggtgccc acgtagcgca gcactgtgcc atggaacagg 180
gcagctgtga tgaagctcac atggcccagc accaccagca ccaggcctgt cttcatcagc 240
accttccgga agtcgcccac actcaggcct ccgaggcgca gacacatgtc ggctccgcgc 300
tggtcccgcc cccggcttca gcgcggctcc cgaggctgcg ggccgccggg ggaccctgct 360
cccatcccgc tggcccgtcg cccgcgcgcc ccgcaccgtc gcgt 404

<210> 873
<211> 175
<212> DNA
<213> Homo sapien

<400> 873
ggctgccagc gcctctaccc cgtgctgcag cagagcctgg tgcgggccgc ccgccgcagg 60
ggcgccgccg cccagccctg aaccagaagc ctgagcaact acggacgcaa gccgaggacc 120
gtgctgccgc cgtccacgaa aagacccgcg ccatcggcct ccagtttgcg tcgag 175

<210> 874
<211> 215
<212> DNA
<213> Homo sapien

<400> 874
ggtagagaac cctgcggctg cgctttcggt gcccgcgaga ggcgctgggg cgcccggcag 60

gggccgctgc gggctccggg agagggtcga aggtgaagat ctcaggaccg gagccccgcc 120
ggggtcccgg gatggtggag ggggccgggg tcggggcctg caggatggtc atggtcgggt 180
ggcagctgcg agagtgacac atggtgagcc gagcg 215

<210> 875
<211> 208
<212> DNA
<213> Homo sapien

<400> 875
atccagagac aatctgccgg ttgtcagagg agaaggccac actcagcaca tccttggtat 60
ggcccacaaa tcgcctcgtg gtggtgcccg ttgtgagatc ccagaggcgc agggttccat 120
cccaggagcc tgagagggca aactggccat ctgaggagat aaccacatca ctaacaaagt 180
gggagtgacc ccgcagagca cgctgtgg 208

<210> 876
<211> 484
<212> DNA
<213> Homo sapien

<400> 876
gagcagctgg tttctcctgg acagcagcat ctggctccgc tcccttcgga actccaggta 60
ctccttattg tttttgagct tgttcatgca gtccatgagg gctgggtagc cacctgagaa 120
tcgccacagg tgcactgcct ggtcctgctc cccataccac gtgttccagt tgcccacgag 180
tgagcatggg tagtcctcat ccaggtgaag cttgggcagc acagcctccg tgaggctgtt 240
gtaggcatcc aggtattcag gctttacatt gtgaaactgg atcttataga ggttgctggt 300
ttccttcttg gacagcaggg tggagtgggc atccttccgg ggatccactt tgtgaacaaa 360
gagggagcgg aaccagctgc cttcattgtc cttggaatag aaacgcgccg cagctgcaga 420
cgcaacgtcc ccagcgcgag gccccgggcc ccccagcagc cgccgcgccg tcacagagat 480
gctg 484

<210> 877
<211> 558
<212> DNA
<213> Homo sapien

<400> 877
ggcgtcctgg tgcttaccac ctggaaactg gtgaggtggt gggagaactc ctggtggacc 60
ctagtggaag ccttccagta atttcttgaa gctgagcgct caggtgagta gggcgacatc 120
tggtggccgg ttgttgaagg tcattgcaga gaggaaggaa gccgaggagg ggagcctgca 180
gtgagggcgt cctggggttc tccggttctc accacccttg ggccacgccg tctagtccac 240
acctgaggag ttggtcaggt agaaggggcg gatgaccgtg cggaagccgt tgaagtgccc 300
tgccgggcag gggaaggagg aggtgctctt cgagctgttg gtgtccaggg cactgggaat 360
cgcagccttc cagccctcga aatcggtgac gtctgccacg aagagccctt cgcagagcat 420
cagggctttg ttttcgtagg caatggtgcg atctgagccg ccagacttgg tgaggcccag 480
gacagggagc tcgtccgagg agcaggagaa gccgtagttc cagcagctct ggatggtggg 540
gaggtagacc agggacca 558

<210> 878
<211> 503
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(503)
<223> n = A,T,C or G

<400> 878
cggccgcaac cgcgcgaacc cgaagtcgat gattttcacc ggggccccgg gcgtgtcgtc 60
ggcgtacagg atgttctccg gcttgaggtc gcggtgcacc acgcccgcct cctcgtgcat 120
gaagctcacg gncgacacga ggctgcgcag gatctggctt gcttccgact cgctgaagtg 180
ccgcntcttg cggatgtgct ccagcagctc cccgccccgc agcagctcca ggaccaggta 240
cgtgtgcagc tggtcgtgat gcacctcgtg cagattcacc acgttggggt gtgactggca 300
caggcgcagg gcagccactt cgcgctgcgt gttcgcctcc agcctgcgac tgaggatctt 360
gactgcgaac tcctggccgc tctggcgctg gcggcagcgg cgacacacag aaaagctgcc 420
ctggcccagc gcaggctccc gcaggtccag ctcgtactgc tggaagaagg gcgagtcctg 480
catcatagcg ctcctggcca ccg 503

<210> 879
<211> 78
<212> DNA
<213> Homo sapien

<400> 879
ctgcctcggc tggcgggcgg ggggaggcgg agagctcggg gcacgcgctg ccgtccggac 60
cgcgtcgacg cggccgcg 78

<210> 880
<211> 211
<212> DNA
<213> Homo sapien

<400> 880
tgatgtgggc gattgatgaa aaggcggttg aggcgtctgg tgagtagtgc atggctagga 60
atagtcctgt ggtgatttgg aggatcaggc aggcgccaag gagtgagccg aagtttcatc 120
atgcggagat gttggatggg gtggggaggt cgatgaatga gtggttaatt aattttatta 180
gggggttaat tttgcggtcg acgcggccgc g 211

<210> 881
<211> 373
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(373)
<223> n = A,T,C or G

<400> 881
cccacagtgg cttgtttccg cagtgcgcgg ccgtcannac ccaactctgg tccaccagga 60
caccccgcgca gtggaacgag aggccgtnga agagcgagac ctgccagggc tgcgagccgc 120
gcgcgcacgg ggcgccatag gcttcggggt ccaagcgcgt gtcgttttgg gggagcagcg 180
ccgcctctgc ggcccagagt tgcgccatca gcagcggcag cagcttcgcc agagcccggg 240
cgccagaggc ggcggagagg tggaggtgcg gagctctcat ggccaggatc tggagtcgc 300
cgataggaag gagggagggg acccagacgt gcctntgccc tgcctgtggt ctgccgcgtc 360
cgacacggcc gcg 373

<210> 882
<211> 300
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(300)

<223> n = A,T,C or G

<400> 882
cggccgcgtt ttttttttt ttttcagaca attcagcctt tattttanaa aataattctg 60
tagcttccac tttctttcat gaaactgagg tcaggcaaga aacaaaaatc caccaagtcc 120
tctccatcct gccatggcgt cctggcctgt gaggacatgg ggcgcctggg agcgggcggg 180
gaggctgggc agcactgggc cagaggcgtc ctggtcactg ctccacctgg tcactgctcc 240
acctcatgct gagaggagcc tgtgtgtcaa accccagggg aaaaagggac aggcagatcg 300

<210> 883
<211> 230
<212> DNA
<213> Homo sapien

<400> 883
ggtagagaac cctgcggctg cgctttcggt gcccgcgaga ggcgctgggg cgcccggcag 60
gggccgctgc gggctccggg agagggtcga aggtgaagat ctcaggaccg gagccccgcc 120
ggggtcccgg gatggtggag ggggccgggg tcggggcctg caggatggtc atggtcgggt 180
ggcagctgcg agagtgacac atggtgagcc gagcggtcga cgcggccgcg 230

<210> 884
<211> 601
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(601)
<223> n = A,T,C or G

<400> 884
gcccccaatt ccagctgcca caccacccac ggtgactgca ttagttcgga tgtcatacaa 60
aagctgattg aagcaaccct ctacttttg gtcgtgagcc ttttgcttgg tgcaggtttc 120
attggctgtg ttggtgacgt tgtcattgca acagaatggg ggaaaggcac tgttctcttt 180
gaagtagggt gagtcctcaa aatccgtata gttggtgaag ccacagcact tgagcccttt 240
catggtggtg ttccacactt gagtgaagtc ttcctgggaa ccataatctt tcttgatggc 300
aggcactacc agcaacgtca ggaagtgctc agccattgtg gtgtacacca aggcgaccac 360
agcagctgca acctcagcaa tgaagatgag gaggaggatg aagaagaacg tcacgagggc 420
acacttgctc tcagtcttag caccatagca gcccaggaaa ccaagagcaa agaccacaac 480
gccggctgcg atgaggaagt agcccacgtt gacaaactgc atggcactgg acgacagtgg 540
cccgaagatc ttcanaaagg atgccccatc gattgacacc cagatgccca ctgccaacag 600
g 601

<210> 885
<211> 207
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(207)
<223> n = A,T,C or G

<400> 885
caggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg 60
ttgtggccct tgagggtgcc annaagggtc atctgctcag ncatggcggc ggcgagagcg 120
tgtgtcnntg cagcgacgag gatggcactg gatggcttag agaaactagc accacaacct 180
ctcctgccgc cggtcgacgc ggccgcg 207

<210> 886
<211> 442
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(442)
<223> n = A,T,C or G

<400> 886
```
canсttatan aaanggnaaa ggaaacccca acatgcntgc nctgccttgg tgaccaggga      60
agtcacccca cggctatggg gaaattancc cgaggcttag ctttcattat cactgtctcc     120
cnnggtgtgc ttgtcaaaga gatattccgc cnagccanat tcgggcgctc ccatcttgcg     180
caagttggtc acgtggtcac ccaattcttt gatggctttc acctgctcat tcaggtaatg     240
tgtctcaatg aagtcacaca aatgggggtc atttttgtca gnggccagtt tgtgcagttc     300
cagtagtgac tgattcacat ttttttccaa atgtaatgca cactccattg cattcagccc     360
gctctcccag tcatcacagt ctggtttntt gatatcctga aggaagattc ggccacctcg     420
tnggttctgc agcttcatca gt                                              442
```

<210> 887
<211> 222
<212> DNA
<213> Homo sapien

<400> 887
```
gctcaggctc caaagccagc aggaaagagg tagctcggga cgtggagccg ccgcccaggt      60
gcgccaggac cacctcggcc gtcaccttag ccaggtggct gcttaggtcc actgtgcgct     120
tcacgtcctc attgatcagc ggcggtgcct cggaggaggc gctgcccggc gccggggccc     180
aagtcccaag caacaggagc agaaacaagc cggcggctgg cg                        222
```

<210> 888
<211> 89
<212> DNA
<213> Homo sapien

<400> 888
```
ggtggcgtag cgcccgctta taaagccgca acaccttttg ctgatgggtc aggtagggtc      60
ccgacgccaa gaacgccatt acggccgcg                                        89
```

<210> 889
<211> 451
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(451)
<223> n = A,T,C or G

<400> 889
```
gcggncgctg gacttggctt gagctgtgag gggtgggagg ggaggatagc accggaagat      60
gctgctccgg gcccaacacc agccctggcc aggctctccc ctcccagggg cagcgcccag     120
tccccagggg ctgccagagc cctgtgtgcc ttgccgcatt cccctgatgc agcttttggc     180
aactgaaagg cagggctctc gctgagtgca cctggggctt cctgagccca tctgcggcgg     240
ccccaccctg gcctaggtgc tgagtgcagc tgctgcagac agcccctccc tccttagtgg     300
agcctggagg gtggggtgct cggggatgca ggcaggggca ggggctccag agccacaggt     360
```

cagaagcagg gctgggggag gggtggagcc attcagcctc aggcaccctc acagctaggt 420
gactaggggc agggacagaa tggggtgaat t 451

<210> 890
<211> 66
<212> DNA
<213> Homo sapien

<400> 890
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac ctgctgcctc acccacagct 60
tttgat 66

<210> 891
<211> 599
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(599)
<223> n = A,T,C or G

<400> 891
gggcgtcctg gtgcttacca cctggaaact ggtgaggtgg tgggagaact cctggtggac 60
cctagtggaa gccttccagt aatttcttga agctgagcgc tcaggtgagt agggcgacat 120
ctggtggccg gttgttgaag gtcattgcag agaggaagga agccgaggag gggagcctgc 180
agtgagggcg tcctggggtt ctccggttct caccaccctt gggccacgcc gtctagtcca 240
cacctgagga gttggtcagg tagaagggc ggatgaccgt gcggaagccg ttgaagtgcc 300
ctgccgggca ggggaaggag gaggtgctct tcgagctgtt ggtgtccagg gcactgggaa 360
tcgcagcctt ccagccctcg aaatcggtga cgtctgccac gaagagccct tcgcagagca 420
tcagggcttt gttttcgtag gcaatggtgc gatctgagcc gccagacttg gtgaggccca 480
ggacagggag ctcgtccgag gagcaggaga agccgtagtt ccagcagctc tggatggtgg 540
ggaggtagac cagggaccag gacaccctct tgtcctggaa gangaagctg gggtgttgt 599

<210> 892
<211> 113
<212> DNA
<213> Homo sapien

<400> 892
gtctcaaaca ggaccgcatt tccggcattt cggctggtgt ccgtgttagt ggccacctgg 60
gccagcaagt cattcatggt ctcactgctc tcctcgtggt tccggcccag gat 113

<210> 893
<211> 208
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(208)
<223> n = A,T,C or G

<400> 893
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg 60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcgagagcg 120
tgtgtcgctg cagcgacgag gatggcactg gatggcttan agaaactagc accacaacct 180
ctcctgccgg tcgacgcggc cgcgaatt 208

<210> 894
<211> 67
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(67)
<223> n = A,T,C or G

<400> 894
gcgatgganc gtgggtaggg agggtccaca gtgtccactc gccgtgtgcg aaggttgact 60
cggtagt 67

<210> 895
<211> 58
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(58)
<223> n = A,T,C or G

<400> 895
gcggccgccc tttttttttt tttttttttt tttttttttt ttttttcccn cnctaaaa 58

<210> 896
<211> 177
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(177)
<223> n = A,T,C or G

<400> 896
gacattttat gacctctccc aatnggggca gaggtgagca cccctggtga aaagttaaga 60
ctnagtgagt ataaatacgc caanaanagc tgtggcttct ttcactggtg tcctcagaaa 120
ggctgtgagc agtgttggtg gcatacctgt cacagcatct agcaaagcac ctgaatt 177

<210> 897
<211> 542
<212> DNA
<213> Homo sapien

<400> 897
gctttctcct tcttatagac gttccggacg ggcatgaccg gtccggtcag ctgggtggcc 60
agtttcagtt cttcagcaga actgtctccc ttcttggggg ccgagggctt cctggggaag 120
aggatgagtt tggagcggta ctccttcagc cgctgcacgt tggtctgcag ggactccgtg 180
gacttgttcc gcctcctcgg atccacagaa atgccgatgg tccgggccac cttcttgtga 240
atgccggcca ccctgagctc ctccaggctg aagccgcggc cggcgcgcac cttcgtgtgg 300
taccgaaccg tggggcagcg cacgatgggc cggatgggac ccgacgcggg gcgcggggcg 360
atgcggcgcg ccttggcttg ccgggcctta cgtctgcgga tcttacgggc cggctggttg 420
aaccacgtgg ccacgcgccg ctgccagtcc ttgtggaagt ggggcttcaa gaccatgcca 480
ttccggctgg gcgccatggc tgcctacggc cctgcggctc ctggtcgacg cggccgcgaa 540

tt 542

<210> 898
<211> 165
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(165)
<223> n = A,T,C or G

<400> 898
tancnatctg ggttacccag ccgttgtggc ccttgagggn gccacgaagg gtcatctgct 60
cagtcatggc ggcggcnana gcgtgtgtng ctgcancgac gaggatggca ctggatggct 120
tanagaaact agcaccacaa cctctcgtcg acgcggccgc gaatt 165

<210> 899
<211> 67
<212> DNA
<213> Homo sapien

<400> 899
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac gctgctgcct cacccacagc 60
ttttgat 67

<210> 900
<211> 77
<212> DNA
<213> Homo sapien

<400> 900
cttccaggtc cagagctccc aggtttccag gttgcagtcc ctccagtccc agagctccca 60
gggtttcggt ttccagt 77

<210> 901
<211> 114
<212> DNA
<213> Homo sapien

<400> 901
gggccgggga ggacggctgg gggctccggg gtcgcctgca caattgcctg agcaggaggc 60
gcaagtggga gatgacgata aagggcgggg ccagcgcggg ccgagagtgg aatt 114

<210> 902
<211> 64
<212> DNA
<213> Homo sapien

<400> 902
tacactactc ctgaggatgc tactcccgag cccggagagg acccacgcgt gacccgggcc 60
aagt 64

<210> 903
<211> 63
<212> DNA
<213> Homo sapien

<400> 903
tcaaaagctg tgggtgaggc aggtcgacgc ggccgcgaat tccaccacac tggactagtg 60
gat 63

<210> 904
<211> 142
<212> DNA
<213> Homo sapien

<400> 904
tcctcagcca gggagacagg gaccaggcag cacaggcctg ccagcaggag gatgccccac 60
gagacagaag acggcattgt cgattcactg tcccaggtca ggtcgacgcg gccgcgaatt 120
ccaccacact ggactagtgg at 142

<210> 905
<211> 101
<212> DNA
<213> Homo sapien

<400> 905
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac gccacctccg agagcctgga 60
tgtgatggcg tcacagaaga gaccctccca gaggcacgga t 101

<210> 906
<211> 506
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(506)
<223> n = A,T,C or G

<400> 906
gcggccgcac acacagccag gcgctaggct ccctgcggga cctcgggaag ggggaagagc 60
gtcaacaatt tacggagggt ccagccgctg ggtcagattg agacaaacca ttgtgtggtt 120
gggtttgggt cagcaggctg gagagggttc tgttcttttt gatcattatc gtttggggcc 180
ccaagggagg gtcttgggag ccacctgagc cccaaagctg ggaaattcct canagctgct 240
catgtcagga gccttctcac tgctgctggc ggnccagggt gcgtcccgca ccacaaagcc 300
tntggaaggt gccttggcct cttcgtgtgc tgggggtttc atgtatacct gcagcgcctc 360
actgtccacc acgtcagcta ggtattcctc ctccagattg aggatgtggt cgatggcttc 420
ctccacattc tctgggagcc ccgtcacagt gacgcagttg ggtctggggg ctccgctctg 480
tgggaagcga atgtccacct tgaatt 506

<210> 907
<211> 93
<212> DNA
<213> Homo sapien

<400> 907
tcccgctgca caagttcacg tccatccgcc ggaccatgtc ggaggttggg ggctctgtgg 60
aggacctgat tgccaaaggc cccgtctcaa agt 93

<210> 908
<211> 238
<212> DNA
<213> Homo sapien

<400> 908
gggtagagaa ccctgcggct gcgctttcgg tgcccgcgag aggcgctggg gcgcccggca 60
ggggccgctg cgggctccgg gagagggtcg aaggtgaaga tctcaggacc ggagccccgc 120
cggggtcccg ggatggtgga gggggccggg gtcggggcct gcaggatggt catggtcggg 180
tggcagctgc gagagtgaca catggtgagc cgagcggagg tcgacgcggc cgcgaatt 238

<210> 909
<211> 190
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(190)
<223> n = A,T,C or G

<400> 909
gggcgtcctg gtgcttacca cctgnaaact ggtgaggtgg tgggagaact cctggnggac 60
cctagtggaa gccttccagt aatttcttga anctgancgc tcaggtgagt agggcgacat 120
ctggnggccg gntgttnaan gtcattgcnn anaggaagga agccgaggag ggganсctgc 180
ngtgagggcg 190

<210> 910
<211> 93
<212> DNA
<213> Homo sapien

<400> 910
tcccgctgca caagttcacg tccatccgcc ggaccatgtc ggaggttggg ggctctgtgg 60
aggacctgat tgccaaaggc cccgtctcaa agt 93

<210> 911
<211> 261
<212> DNA
<213> Homo sapien

<400> 911
gggtccgtca gggctgaaga cctgcccagg cacacaactc accacggccg gtagcccatt 60
ctcgcaggtg acattcttca tggggtccag tgacacctgg gggcccagct tgcagctgga 120
gatgtgggcc tctgtgccgg tgcagtccat ggagaatggc cagtagcgct gcttcctccg 180
tgaggcaaac attttgtaca ctttggtatt gtatgtcctc tccccaggga agccaaacat 240
gccgcagacc acgcgggaat t 261

<210> 912
<211> 67
<212> DNA
<213> Homo sapien

<400> 912
gcgatggagc gtgggtaggg agggtccaca gtgtccactc gccgtgtgcg aaggttgact 60
cggtagt 67

<210> 913
<211> 545
<212> DNA
<213> Homo sapien

<400> 913

gctttctcct tcttatagac gttccggacg ggcatgaccg gtccggtcag ctgggtggcc 60
agtttcagtt cttcagcaga actgtctccc ttcttggggg ccgagggctt cctggggaag 120
aggatgagtt tggagcggta ctccttcagc cgctgcacgt tggcctgcag ggactccgtg 180
gacttgttcc gcctcctcgg atccacagaa atgccgatgg tccgggccac cttcttgtga 240
atgccggcca ccctgagctc ctccaggctg aagccgcggc cggcgcgcac cttcgtgtgg 300
taccgaaccg tggggcagcg cacgatgggc cggatgggac ccgacgcggg gcgcggggcg 360
atgcggcgcg ccttggcttg ccgggcctta cgtctgcgga tcttacgggc cggctggttg 420
aaccacgtgg ccacgcgccg ctgccagtcc ttgtggaagt ggggcttcaa gaccatgcca 480
ttccggctgg gcgccatggc tgcctacggc cctgcggctc ctgcgcgtcg acgcggccgc 540
gaatt 545

<210> 914
<211> 295
<212> DNA
<213> Homo sapien

<400> 914
gctcggcatc agaccagttc ctcagcttcc tgaagtaacc atagcaattg gacttgtggt 60
aaaaccatcc aggagcacag ctgggtctca tgatgatatc acccaggact cctgttttgg 120
ccaggcagct cagcaatagg agcagccgca tgcttctgga agccatcttc ctcctaccct 180
gaggatgtag ctagtgcaag gatctcagag accttactag cgcttctttg aaactcctgg 240
gttctccttg atctgcaaat ctgtttggca accaaggtcg acgcggccgc gaatt 295

<210> 915
<211> 391
<212> DNA
<213> Homo sapien

<400> 915
gctaaacact gtccagcgca ggggggtgct agggaggtag cgtgacaaca cgatggctgc 60
gatgcctgaa gtgatgacca cgatggcgga agtgacagag aggatgttga ccacgcagta 120
ctgcagagcc accgcatctt gaggggtgcc cacgtagcgc agcactgtgc catggaacag 180
ggcagctgtg atgaagctca catggcccag caccaccagc accaggcctg tcttcatcag 240
caccttccgg aagtcgccca cactcaggcc tccgaggcgc agacacatgt cggctccgcg 300
ctggtcccgc ccccggcttc agcgcggctc ccgaggctgc gggccgccgg gggaccctgc 360
tcccatcccg ctgtcgacgc ggccgcgaat t 391

<210> 916
<211> 559
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(559)
<223> n = A,T,C or G

<400> 916
gggcgtcctg gtgcttacca cctggaaact ggtgaggtgg tgggagaact cctggtggac 60
cctagtggaa gccttccagt aatttcttga agctgagcgc tcaggtgagt agggcgacat 120
ctggtggccg gttgttgaag gtcattgcag agaggaagga agccgaggag gggagcctgc 180
agtgagggcg tcctggggtt ctccggttct caccaccctt gggccacgcc gtctagtcca 240
cacctgagga gttggtcagg tagaaggggc ggatgaccgt gcggaagccg ttgaagtgcc 300
ctgccgggca ggggaaggag gaggtgctct tcgagctgtt ggtgtccagg gcactgggaa 360
tcgcagcctt ccagccctcg aaatcggtga cgtctgccac gaagagccct tcgcagagca 420
tcagggcttt gttttcgtag gcaatggtgc gatctgagcc gccagacttg gtgaggccca 480
ggacagggag ctcgtccgag gagcaggaga agccgtagtt ccagcagctc tggatggngg 540
ggangtagac cagggacca 559

<210> 917
<211> 447
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(447)
<223> n = A,T,C or G

<400> 917
gctccttggc gagcacgtga ccccggcggg cacgcaggag ggcaggcagg cccctgcgca 60
ggcgctgggt ggactgcttc caggtgtcat attggaagaa cttgcccacg ggtatctgg 120
ggaagttgtc cggaagcacg gtcggagggg tcgacacgtc cctctcggac ttggcggggg 180
tagcacagta cgtctccagg agggccaggt cacagctgcg gaaacagcac tcctcaacga 240
tgccacggct gcgacggctc acacggcttg cgggcctgct gaantanaag ccgcggtccc 300
cacagacgaa ctggagggtg tccaccagct ccccgncgca cagggtctca ctggggcggn 360
aagcagcaat gcancacgag gcgaaggcca anaaggngan aagcaccanc atcgacttcc 420
ccattgggat tcccattggt gtctgga 447

<210> 918
<211> 574
<212> DNA
<213> Homo sapien

<400> 918
gctccttggc gagcacgtga ccccggcggg cacgcaggag ggcaggcagg cccctgcgca 60
ggcgctgggt ggactgcttc caggtgtcat attggaagaa cttgcccacg ggtatctgg 120
ggaagttgtc cggaagcacg gtcggagggg tcgacacgtc cctctcggac ttggcggggg 180
tagcacagta cgtctccagg agggccaggt cacagctgcg gaaacagcac tcctcaacga 240
tgccacggct gcgacggctc acacggcttg cgggcctgct gaagtagaag ccgcggtccc 300
cacagacgaa ctggagggtg tccaccagct ccccgccgca cagggtctca ctggggcggt 360
aagcagcaat gcagcacgag gcgaaggcca agaaggtgag aagcaccagc atcgacttcc 420
ccattgggat tcccattggt gtctggaagc cggcgacgct gccgcccacc tccctgctgc 480
gtgtcgcaaa ccgaacagcg ggcgttggcc ctcctgccgg acactcctct gccagcgccg 540
ctctggccga gtcgcggggg ccgaatgtgc gacg 574

<210> 919
<211> 139
<212> DNA
<213> Homo sapien

<400> 919
gccgcgctcg tcgtcgacaa cggctccggc atgtgcaagg ccggcttcgc gggcgacgat 60
gcccccccggg ccgtcttccc ctccatcgtg ggcgccccca ggcaccaggg cgtgatggtg 120
ggcatgggtc agaaggatt 139

<210> 920
<211> 576
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(576)
<223> n = A,T,C or G

<400> 920
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg 60
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa 120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt 180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccagaa 240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat 300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat 360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg 420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct 480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgnttca cctacagcgt 540
cactgtcgat ggntgnacga gtcacaccgg nagcct 576

<210> 921
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 921
gcgcatctgc ccgccctagt cggggaagag caggaagccg gagaagacgc tgtcagagcc 60
ctggatgccc accatgtcgt agtagtcatt gacagccagc cacacctcct cgcccacctg 120
caacctcagc agcacaccgc ccgagttgac ctgattggtt ttggacgtgt ggccacagaa 180
ggtgaccact ttgacgccgc tgcggtacag cagcacgcac aggttggctg tatgcgacgc 240
gtggtagaca aagtagtaga ggccggggac tttgcaggtg aacttgccag tgctcgtgtc 300
ataatctccc tgcgggttgg tgaggaccgc gttgaatctg atcaggctgt tgggtgcagg 360
gggctggtgg gtctgccgag tgaccgngaa cactgactgg aatttctnnt tgnatctgnc 420
c 421

<210> 922
<211> 177
<212> DNA
<213> Homo sapien

<400> 922
gacattttat gacctctccc aataggggca gaggtgagca cccctggtga aaagttaaga 60
ctcagtgagt ataaatacgc caagaagagc tgtggcttct ttcactggtg tcctcagaaa 120
ggctgtgagc agtgttggtg gcatacctgt cacagcatct agcaaagcac ctgaatt 177

<210> 923
<211> 133
<212> DNA
<213> Homo sapien

<400> 923
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac gcgagcagcg gcggcggcgc 60
ggagagacgc agcggaggtt ttcctggttt cggaccccag cggccggatg gtgaaatcct 120
ccctgcagcg gat 133

<210> 924
<211> 216
<212> DNA
<213> Homo sapien

<400> 924

gggtagagaa ccctgcggct gcgctttcgg tgcccgcgag aggcgctggg gcgcccggca 60
ggggccgctg cgggctccgg gagagggtcg aaggtgaaga tctcaggacc ggagccccgc 120
cggggtcccg ggatggtgga gggggccggg gtcggggcct gcaggatggt catggtcggg 180
tggcagctgc gagagtgaca catggtgagc cgagcg 216

<210> 925
<211> 649
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(649)
<223> n = A,T,C or G

<400> 925
ggcccccaat tccagctgcc acaccaccca cggtgactgc attagttcgg atgtcataca 60
aaagctgatt gaagcaaccc tctacttttt ggtcgtgagc cttttgcttg gtgcaggttt 120
cattggctgt gttggtgacg ttgtcattgc aacagaatgg gggaaaggca ctgttctctt 180
tgaagtaggg tgagtcctca aaatccgtat agttggtgaa gccacagcac ttgagccctt 240
tcatggtggt gttccacact tgagtgaagt cttcctggga accataatct ttcttgatgg 300
caggcactac cagcaacgtc aggaagtgct cagccattgt ggtgtacacc aaggcgacca 360
cagcagctgc aacctcagca atgaagatga ggaggaggat gaagaagaac gtcacgaggg 420
cacacttgct ctcagtctta ncaccatagc agcccaggaa accaagagca aagaccacaa 480
cgccggctgc gatgaggaag tagcccacgn tgacaaactg catggcactg gacgacagtg 540
gcccgaagat cttcagaaag gatgccccat cgattgacac ccagatgccc actgccaaca 600
ggnctgcacc acacagaaag atgagcaaat tgaagaggat catcatggt 649

<210> 926
<211> 341
<212> DNA
<213> Homo sapien

<400> 926
gggtcctcaa actctcgaat gtacggcgca atgccacaat aaggttgatt gtggtgtttt 60
tcatgtggca gtttctccag gggtggcagg tatggaatag ggtcacgggg ggcaaagagg 120
gccagaaggt tgggcggcag gaactgggtc atcttgccaa gtcgcgtagc gccctcctcg 180
ctctggcgtc tgtccggagg ctcgcggcgg ctgcggcagc ccctcagcaa caacaactcc 240
tgcttcggct tccactccgg gggcgtccac gtccgtctga ttccgtcgcc cgctaagcga 300
gcgcaccaga ccgctgctca gcgtcgacgc ggccgcgaat t 341

<210> 927
<211> 431
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(431)
<223> n = A,T,C or G

<400> 927
gcggccgcca cgctggtttt gcatcttcag gagacgctcg tagccctcgc gcttctcctc 60
ggccaattcg cggaagaagt ggctcacgcc ttccagagcc acatcatcgc ggtcgaaata 120
gaagcccaga gagaggtagg tgtaggaggc ctgcaggtac aaattgacca ggctgttgac 180
ggctgcctcc acgtcggtgg aataattctg acgaatctgg gagctcatgg ttggttggca 240
agaaggagct aaccacaaaa acggngctgg caggtcccag aagcaggaga tggccganaa 300
gatggtcccg gaggttgcaa gcggagagga aatcggaggg cggtcggagg ctggaagaga 360

gtccccggat ctgttccgtc caaacactgt tgaagcaaga gacagacccg cggtcgacgc 420
ggccgcgaat t 431

<210> 928
<211> 538
<212> DNA
<213> Homo sapien

<400> 928
gtggcctgca aggccgcgga cagggcgagc accgagtcgt acattttgca gctcatcatc 60
cccgtgctct gcgtgacgca gtccatccac agccccttgt acatggcctg ggccgtgatg 120
atgttgtcac ccgcatagga gctcatctgc cactgcggga tggcggtgca ggccaccaga 180
cccacccagc ccagcagggc catggagaag cccagcaact gcaggcccga attggccatt 240
tccgccctca gaaaacactg gggcgccgg gcgggagacc ctacagtaaa acaaacgaca 300
cttgggggc agccccacaa aagaaaactt gaggtggagt tttccggtca cccaaagaga 360
caaaaagggt ttgggccagg tgaatgcaaa tcttgtcacc aaactacaca caaatcgacc 420
cctccagtga agcgatggcc tcgcggcaca gggagtagga tacgccggga gggtggttcc 480
agacaaaatt ggtggtcccc gaaggccagg cggttccctc cgggcgctct cggcgacc 538

<210> 929
<211> 69
<212> DNA
<213> Homo sapien

<400> 929
ctcctcgacc accagcttgc actggcagta gttgagcagc agcggcgtga tctgcttgtc 60
cagctggat 69

<210> 930
<211> 544
<212> DNA
<213> Homo sapien

<400> 930
gctttctcct tcttatagac gttccggacg ggcatgaccg gtccggtcag ctgggtggcc 60
agtttcagtt cttcagcaga actgtctccc ttcttggggg ccgagggctt cctggggaag 120
aggatgagtt tggagcggta ctccttcagc cgctgcacgt tggcctgcag ggactccgtg 180
gacttgttcc gcctcctcgg atccacagaa atgccgatgg tccgggccac cttcttgtga 240
atgccggcca ccctgagctc ctccaggctg aagccgcggc cggcgcgcac cttcgtgtgg 300
taccgaaccg tggggcagcg cacgatgggc cggatgggac ccgacgcggg gcgcggggcg 360
atgcggcgcg ccttggcttg ccgggcctta cgtctgcgga tcttacgggc cggctggttg 420
aaccacgtgg ccacgcgccg ctgccagtcc ttgtggaagt ggggcttcaa gaccatgcca 480
ttccggctgg gcgccatggc tgcctacggc cctgcggctc ctgcggtcga cgcggccgcg 540
aatt 544

<210> 931
<211> 596
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(596)
<223> n = A,T,C or G

<400> 931
gttgctgcag tggcttgggc gtcaggaggc tcactgaggg ggccacatga ccccagccag 60
tgacagtgca gtggaggccg ttggggaagg aggcgttggc tgcagggagg cagatgggcc 120

ggatgtagcg ggagaaggtg atgggtctgc tgagttggag gagtgcaatg tcgccctggg 180
agccctcctg gaggtagctg gggtggggga tgatgtcctt cagggtgctg accttggcgt 240
cctcggagta ggagtctagc tggtgggccc ccagcttgac ctcataggct tccttgtggt 300
gctcgctggg gaagcagtga gcagctgaca gcacccactg ctcagacacg agagagccac 360
cacacacatg gacgccttca taggtgatgc tgacctgcca gggccactga ccggcgactg 420
cactgctgcc acctgtgatg cgtgcttggg gggccacacc gcagggagct tctgcccctt 480
ccgctcctgt ccccgaccgg agtaatccaa gatagagcag aatggccaca gcccccanct 540
gcccaggccc caggaccccc ttctgggcca tggcccagga caagggcccc tggggc 596

<210> 932
<211> 153
<212> DNA
<213> Homo sapien

<400> 932
tctgtgctgg ggtctgggct ccgtggagag atgtgtaggg gtaatgagaa attgatcagc 60
aatgagaggt ggactctgag ccacctccct gaccctgaat cattcaagcg aggagcagag 120
gagctcttga ctgggggacg gggatgtgag gat 153

<210> 933
<211> 112
<212> DNA
<213> Homo sapien

<400> 933
tcaaacttgc cattgttaaa agcagccaca ttttggacct gcagtttcct cagaaatagt 60
taggattctg tgtcgacgcg gccgcgaatt ccaccacact ggactagtgg at 112

<210> 934
<211> 74
<212> DNA
<213> Homo sapien

<400> 934
gtggccatcg agtccccatc ctggtcggcc acccggaaac gccgctcgtc ccgaggtcga 60
cgcggccgcg aatt 74

<210> 935
<211> 380
<212> DNA
<213> Homo sapien

<400> 935
gcggccgcca tcttggtcct tttccaccat tttcagcccc tccagggctt ggaggacccg 60
gcgggccaca ctcttggagc ctcggctgaa gtggctgggc atgacgccgt ttctctgacg 120
tcccccatag atcttggtca tggagccaac cccagcgcca ccccggaggt acaggtgccg 180
cgctgtggaa gcagctcgcg tgtagaacca gttctcatcg tagggagcaa gctctttgtg 240
cttggccagc ttgacggtat ccacccattc ggggactttc agcttcccgg actttttgag 300
gaaggctgcc agagctctga cgaactcctg ctggttcacg tcttttacag taactccagg 360
catcgtgcgg cctccgcgcg 380

<210> 936
<211> 155
<212> DNA
<213> Homo sapien

<400> 936
ctggcgcttt gaggatggtg tcctggaccc tgattacccc cgaaatatct ctgacggctt 60

cgatggcatc ccggacaacg tggatgcagc cttggccctc cctgcccata gctacagtgg 120
ccgggagcgg gtctacttct tcaaggggaa acagt 155

<210> 937
<211> 213
<212> DNA
<213> Homo sapien

<400> 937
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg 60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcgagagcg 120
tgtgtcgctg cagcgacgag gatggcactg gatggcttag agaaactagc accacaacct 180
ctcctgccgc cgccgtcgac gcggccgcga att 213

<210> 938
<211> 261
<212> DNA
<213> Homo sapien

<400> 938
gggtccgtca gggctgaaga cctgcccagg cacacaactc accacggccg gtagcccatt 60
ctcgcaggtg acattcttca tggggtccag tgacacctgg gggcccagct tgcagctgga 120
gatgtgggcc tctgtgccgg tgcagtccat ggagaatggc cagtagcgct gcttcctccg 180
tgaggcaaac attttgtaca ctttggtatt gtatgtcctc tccccaggga agccaaacat 240
gccgcagacc acgcgggaat t 261

<210> 939
<211> 228
<212> DNA
<213> Homo sapien

<400> 939
gctcaggctc caaagccagc aggaaagagg tagctcggga cgtggagccg ccgcccaggt 60
gcgccaggac cacctcggcc gtcaccttag ccaggtggct gcttaggtcc actgtgcgct 120
tcacgtcctc attgatcagc ggcggtgcct cggaggaggc gctgcccggc gccggggccc 180
aagtcccaag caacaggagc agaaacaagc cggcggctgg cgcgtcga 228

<210> 940
<211> 97
<212> DNA
<213> Homo sapien

<400> 940
tccttcaagt atgcctgggt gctggacaag ctgaaggcgg agcgtgagcg cggcatcacc 60
atcgacatct ccctctggaa gttcgagacc accaagt 97

<210> 941
<211> 200
<212> DNA
<213> Homo sapien

<400> 941
ggacccaggg gcacaggctc ccagatgata gcccctctct gaatgagcac ccaggcaaca 60
cagtccgggg ctgtgtgtag caaacctgtc agcagctgcc tcctgggaca accacccccct 120
tacatgctat ctatctacca gacaaatgaa agctcttctt accccatctc ccaggcaccc 180
cccagcaagg gctctgaatt 200

<210> 942

<211> 209
<212> DNA
<213> Homo sapien

<400> 942
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg 60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcgagagcg 120
tgtgtcgctg cagcgacgag gatggcactg gatggcttag agaaactagc accacaacct 180
ctcctgccgc gtcgacgcgg ccgcgaatt 209

<210> 943
<211> 130
<212> DNA
<213> Homo sapien

<400> 943
gtaaggagcc caagaaaaag tgatgccgcc tggcagactc gccatccccc aacgacacag 60
ggcaggacag cagaggacgt gctgggatta aacacattcc ccctcaaaaa aaaaaaaaaa 120
aaaaaaaaaa 130

<210> 944
<211> 563
<212> DNA
<213> Homo sapien

<400> 944
gacagtccca gtactctttg ctcagctttc ggggccggcc tcgtttccgc ttcccgtgct 60
tgggatcccc cttcttgcag tcacgaaaac catcgctggg gaagagcttg ccatcagtgg 120
gatccaggtc cacgtcactt ccaccggagt ctgaggagtg ggagctccga gaagcaccag 180
tccctgcggt ggagacgtca gagctgccgg gggagggggc tcctgcgcca cagctgccgg 240
ggtggtaggg gctggcttgc tgaccgtcgt ccagcagctc ctgggcaaag gggctgccct 300
ggtcaaaggg ccctgggtct agggcctcct ggaaggccat gccatccttc tccagcagct 360
caatgatcca actgagctca tcagaagagc tggaagtgag gtctcgcagc tgggcatgga 420
gttggtcccc cagaggccca aagaccagac gcagctcctc aagggcacaa ttgcagaggg 480
tggcgccatc catgtcacat cgtgagaagt caatggcgct tgcgtcgtac ttgttcttct 540
ccacttggta gctgatccag tcc 563

<210> 945
<211> 637
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(637)
<223> n = A,T,C or G

<400> 945
gctgagcccc ttactgctcc tcccaccaat gggctccctc acacccagga caggactaag 60
agggagctgg cggagaatgg aggtgtcctg cagctggtgg gcccagagga gaagatgggc 120
ctcccgggct cagactcaca gaaagagctg gcctgaccac caggcacctc actggcactg 180
ctgacccatc ccagaaacac aatctcaggg acccgagcag ctccaaggac gagaggatac 240
agcagacaca acctaataga gagggcgcct gcagccttaa cctccacggc cttcgatact 300
tatgcaagcc tggtgttgct cctgtcctca gagtcatcct gcgctcatgc cttttcccga 360
atgggttcac ctctggcagt tgccgcttca gtcttggcct tagcctcatc ttgaagtggg 420
tagctggcgg gagagggtgg ctgcgccccc tgctggccct gaggctgcag agttgggagc 480
aggacacctc acctgagttt catttttttt catgtccaaa ccatgcacat actatagtcc 540
agaatcaaag cacttttgaa aagtggctgc atggccatcc tccagggccc aggaagttgc 600

attccaaggg cctgtttaca tggcagcana atccatc 637

<210> 946
<211> 306
<212> DNA
<213> Homo sapien

<400> 946
ggcgcgggct cctctcccct cggctgcccg gatgcggagc aagcggctcc cggggaagct 60
ggcgcgtcgg ccggctaccg cggcgagcac ttaggaaggc gcggggtggc cagttcacag 120
ctgcccgctc caagtggggg gaggcgaatt ggagaggagg aggaggggag gaaaaagagc 180
aaaagtgggg gcgcttgcac cccttctctt ctcctcctgc aaagaaaagt ttccggggtt 240
gaaactggcg agtctccgcg ccactgaagt ttccagtcag tttcgaggtc gacgcggccg 300
cgaatt 306

<210> 947
<211> 71
<212> DNA
<213> Homo sapien

<400> 947
ggtccagagc tcccaggttt ccaggttgca gtccctccag tcccagagct cccagggttt 60
cggtttccag t 71

<210> 948
<211> 575
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(575)
<223> n = A,T,C or G

<400> 948
gcggccgccc tttttttttt tttttgtcag caaaaatctt tttaataaga gagtaggatc 60
cagggttagt ttttgtagcc tcggctggcc cgtcggcctc tggcacgctc gaacttccgg 120
cccttggagc ggacgtaggg tttggtgtgg ctgtgcgggg ttcctggggc cttgccgaaa 180
tgccggtaca cctctcggcc cttgcgagga ccggagagca ggacagtgcc acagccctta 240
ggggagtcca gggccagctg gtcnaaagtg aggatcttgc cccctgccct gaggatgcgg 300
ctgcgggccc ggctggtcac gcgcagtgca cataccttca gttngggtac ctcctgaacc 360
cgcacatcat cagttatggt ccccacaacc acggccgtct tgttttcccg gccaggaagc 420
ttcatcttcc ggatcatccg ggaaagggac agaggcggcc ggttggtgcg actcataaac 480
aacctcttca acacaacctg gttgaatgtg gagttggttc ttctggccag aaacctgtat 540
aacttgacca acagcctcag gtagatatcc tggct 575

<210> 949
<211> 294
<212> DNA
<213> Homo sapien

<400> 949
ggggtttcca cgtagcccac aatgcccaca accaccatgg gtggtgtctc tacaatggtc 60
acagcctcca ccacctcctt cttgttcacc ttggatcccg gcctgtcgac ttcccgcacg 120
atgtgagtca tgccagcctt gtatcccagg aaggctgtga ggtggaccgg cttggacggg 180
tcatccttag ggaagctctt caccttccca cgatgcctgc tgctgcgctt ccgaggcagg 240
aagccgaggg acccatgtct gggagcggag aactttctgt gagacatcac gcca 294

<210> 950
<211> 693
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(693)
<223> n = A,T,C or G

<400> 950
ggcccccaat tccagctgcc acaccaccca cggtgactgc attagttcgg atgtcataca 60
aaagctgatt gaagcaaccc tctacttttt ggtcgtgagc cttttgcttg gtgcaggttt 120
cattggctgt gttggtgacg ttgtcattgc aacagaatgg gggaaaggca ctgttctctt 180
tgaagtaggg tgagtcctca aaatccgtat agttggtgaa gccacagcac ttgagccctt 240
tcatggtggt gttccacact tgagtgaagt cttcctggga accataatct ttcttgatgg 300
caggcactac cagcaacgtc aggaagtgct cagccattgt ggtgtacacc aaggcgacca 360
cagcagctgc aacctcagca atgaagatga ggaggaggat gaagaagaac gtcacgaggg 420
cacacttgct ctcagtctta gcaccatagc agcccaggaa accaagagca aagaccacaa 480
cgccggctgc gatgaggaag tagcccacgt tgacaaactg catggcactg gacgacagtg 540
gcccgaagat cttcanaaag gatgccccat cgattgacac ccagatgccc actgccaaca 600
gggctgcacc acacagaaag atgagcaaat tgaagaggat catcatggtc ttaatgaagc 660
tgaagcactg catggnggct cctgttcagg gct 693

<210> 951
<211> 607
<212> DNA
<213> Homo sapien

<400> 951
gtggcctgca aggccgcgga cagggcgagc accgagtcgt acattttgca gctcatcatc 60
cccgtgctct gcgtgacgca gtccatccac agccccttgt acatggcctg ggccgtgatg 120
atgttgtcac ccgcatagga gctcatctgc cactgcggga tggcggtgca ggccaccaga 180
cccacccagc ccagcagggc catggagaag cccagcaact gcaggcccga attggccatt 240
tccgccctca gaaaacactg gggcgccgg gcgggagacc ctacagtaaa acaaacgaca 300
cttgggggc agccccacaa aagaaaactt gaggtggagt tttccggtca cccaaagaga 360
caaaaagggt ttgggccagg tgaatgcaaa tcttgtcacc aaactacaca caaatcgacc 420
cctccagtga agcgatggcc tcgcggcaca gggagtagga tacgccggga gggtggttcc 480
agacaaaatt ggtggtcccc gaaggccagg cggttccctc cgggcgctct cggcgaccct 540
aggcaaacaa aaggtggagg ggccgtctgg gcgcgtttct gagcgccggc aagtcccaaa 600
gtatcct 607

<210> 952
<211> 372
<212> DNA
<213> Homo sapien

<400> 952
ggatgaggtc aacccgaagg ggtttcttga gaagcagtga cttcttctgg actttggttc 60
tcttctttgt cagccctttt tccttggagc cagtgtccac gaagaagagt tttcatttg 120
gggcctctga caacaagcca ccgctcgtgc gctcctgtag ccgcacgtct tccaggaact 180
ggtcaacctc cagccccagc ggctcctgag caagccgccg ccagccccgc ttcttatttc 240
ttgggcctcg ccgccgccgc ctcagcgctg ggtccaccga agtgggccgc agccccagga 300
aaccagaatc ggcatcgctt ttcgagctgc gcttcccacc aacgccactg cctgtcgacg 360
cggccgcgaa tt 372

<210> 953
<211> 275

<212> DNA
<213> Homo sapien

<400> 953
gccatctgct gtttttctc agcaccttcc gtcttttgtt caatacttga gacgaccctc 60
caagatgacc tacgggctcc tacaacattt ttataagcaa ctgagagaag attcctctcc 120
tcattggata attcagctcc ttgctcagtt acagacttca tgcaggctgc catgtcatca 180
tatcgctcag cctgctcggc cagtttggcc ttctgaacca gctcattttt atccatgact 240
ggatgttctg tgtccggtcg acgcggccgc gaatt 275

<210> 954
<211> 189
<212> DNA
<213> Homo sapien

<400> 954
ggctcccact tccctgcttc gatggagaag gcgaggtggt ccagcaggtg ccgtaggtcc 60
ctgacccagc tgaccaccac cctgggccag cttctgacag tcccacctcc cagttgctgg 120
aggggtagtg gcctcacaga cggccctcct ctagatgcag tgggcccaga gtcgacgcgg 180
ccgcgaatt 189

<210> 955
<211> 189
<212> DNA
<213> Homo sapien

<400> 955
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg 60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcgagagcg 120
tgtgtcgctg cagcgacgag gatggcactg gatggcttag agaaactagc gtcgacgcgg 180
ccgcgaatt 189

<210> 956
<211> 216
<212> DNA
<213> Homo sapien

<400> 956
gcggccgcac gtgtaggcaa agaagcctgt gtccggcctc cagaccatgt tggcccgccc 60
attcccgctg taaccgacga cagccttcag acgcagccac ccaccgctgg cgggaggcgg 120
gcaagtgccc ttggcagagt gggggctgca gctgaccctg gcaggcgtga aggccttgca 180
ggaagccagg taggtggtgc gtggggcccc cgaatt 216

<210> 957
<211> 62
<212> DNA
<213> Homo sapien

<400> 957
ccagtgggag gctcccaccc tggtagatga acagcccctg gagaactacc tggatatgga 60
gt 62

<210> 958
<211> 199
<212> DNA
<213> Homo sapien

<400> 958

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ggattcggtc atattggaat tgctgttcct gatgtataca gtgcttgtaa aaggtttgaa      60
gaactgggag tcaaatttgt gaagaaacct gatgatggta aaatgaaagg cctggcattt     120
attcaagatc ctgatggcta ctggattgaa attttgaatc ctaacaaaat ggcaacctta     180
atgtagtgct gtgagaatt                                                  199

<210> 959
<211> 212
<212> DNA
<213> Homo sapien

<400> 959
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg      60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcgagagcg     120
tgtgtcgctg cagcgacgag gatggcactg gatggcttag agaaactagc accacaacct     180
ctcctgccgc cgcgtcgacg cggccgcgaa tt                                   212

<210> 960
<211> 177
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(177)
<223> n = A,T,C or G

<400> 960
gacattttat gacctctccc aatagggca gaggtgagca cccctggtga aaagttaaga      60
ctcagtgagt ataaatacnc caagaagagc tgtggcttct ttcactggtg tcctcagaaa     120
ggctgtgagc agtgttggtg gcatacctgt cacagcatct agcaaagcac ctgaatt        177

<210> 961
<211> 490
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(490)
<223> n = A,T,C or G

<400> 961
gggcgtcctg gtgcttacca cctggaaact ggtgaggtgg tgggagaact cctggtggac      60
cctagtggaa gccttccagt aatttcttga agctgagcgc tcaggtgagt agggcgacat     120
ctggtggccg gttgttgaag gtcattgcag agaggaagga agccgaggag gggagcctgc     180
agtgagggcg tcctggggtt ctncggttct caccaccctt gggccacgcc gtctagtcca     240
cacctgagga gttggtcagg tagaagggc ggatgaccgt gcggaagccg ttgaantgcc      300
ctgccgggca ggggaaggag gaggtgctct tcgagctgtt ggtgtccagg gcactgggaa     360
tcgcagcctt ccagccctcg aaatcggtga cgtctgccac gaagagccct tcgcagagca     420
tcagggcttt gttttcgtag gcaatggtgc gatctgagcc gccagacttg gtgaggccca     480
ggacagggag                                                            490

<210> 962
<211> 159
<212> DNA
<213> Homo sapien

<220>
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<221> misc_feature
<222> (1)...(159)
<223> n = A,T,C or G

<400> 962
gggtcggccc gggtggttgc ggccacagcg cagcggcgga gagcggcgcc cancatgacg 60
gcgatggcgg cgcgcgggcn gnggacagan agaagccggt gtaagctcgc gggttgctcc 120
ggagcgggcg ggggccggac gtcgacgcgg ccgcgaatt 159

<210> 963
<211> 217
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(217)
<223> n = A,T,C or G

<400> 963
gggtagagaa ccctgcggct gcgctttcgg tgcccgcgag aggcgctggg gcgcccggca 60
ggggccgctg cgggctccnn gagagggtcg aaggtgaaga tctcaggacc ggagccccgc 120
cggggtcccg ggatggtgga gggggccggg gtcggggcct gcaggatggt catggtcggg 180
tggcagctgc gagagtgaca catggtgagc cgagcgt 217

<210> 964
<211> 540
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(540)
<223> n = A,T,C or G

<400> 964
gtggcctgca aggccgcgga cagggcgagc accgagtcgt acattttgca gctcatcatc 60
cccgtgctct gcgtgacgca gtccatccac agccccttgt acatggcctg ggccgtgatg 120
atgttgtcac ccgcatagga gctcatctgc cactgcggga tggcggtgca ggccaccaga 180
cccacccagc ccagcagggc catggagaag cccagcaact gcaggcccga attggccatt 240
tccgccctca gaaaacactg gggcgccgg gcgggagacc ctacagtaaa acaaacgaca 300
cttgggggc agccccacaa aagaaaactt gaggtggagt tttccggtca cccaaagaga 360
caaaaagggt ttgggccagg tgaatgcaaa tcttgtcacc aaactacaca caaatcgacc 420
cctccagtga agcgatggcc tcgcggcaca gggagtagga tacgccggga gggtggttcc 480
aganaaaatt ggtggtcccc gaaggccagg cggttccctc cgggcgctct cggcgaccct 540

<210> 965
<211> 321
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(321)
<223> n = A,T,C or G

<400> 965
gcccacagtg gcttgtttcc gcagtgcgcg gccgtcagca cccaactctg gtccaccagg 60

acacccgcgc agtggaacga gaggccgttg aagagcgaga cctgccaggg ctgcgagccg 120
cgcgcgcacg gggcgccata ggcttcgggg tccaagcgcg tgtcgttttg ggggagcagc 180
gccgcctctg cggcccagag ttgcgccatc agcagcggca gcagcttcgc cagagcccgg 240
gcgccagagg cggcggagag gtggaggtgc ggagctctca tggccaggat ctgggagtng 300
ccgatangaa ggagggaggg g 321

<210> 966
<211> 642
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(642)
<223> n = A,T,C or G

<400> 966
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg 60
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa 120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt 180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccanaa 240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat 300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat 360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg 420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct 480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgcttca cctacagcgt 540
cactgtcgat ggctgcacga gtcacaccgg agcctggggc aagacagtga ttgaatacaa 600
aaccaccaag acctcccgcc tgcccatcat cgatgtggcc cc 642

<210> 967
<211> 650
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(650)
<223> n = A,T,C or G

<400> 967
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg 60
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa 120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt 180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccagaa 240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat 300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat 360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg 420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct 480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgcttca cctacagcgt 540
cactgtcgat ggctgcacga gtcacaccgg nagcctgggg caagacagtg attgaataca 600
aaaccaccaa gaccttccgc ctgcccatca tcgatgtggc ccccttggac 650

<210> 968
<211> 629
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(629)
<223> n = A,T,C or G

<400> 968
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg 60
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa 120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt 180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccagaa 240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat 300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat 360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg 420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct 480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgcttca cctacagcgt 540
cactgtcgat ggctgcacga gtcacaccgg nagcctgggg caagacagtg attgaataca 600
aaaccaccaa gacctcccgc ctgcccatc 629

<210> 969
<211> 222
<212> DNA
<213> Homo sapien

<400> 969
gaatgtcagg ggtgttgggg gctttggctg ggtcctgggt cttcgtgtag agacctggag 60
gcgcttggtt cttggggttc tccaggattc cagcctcgta gctgatgtgc atgaggttct 120
catccatgct ccacgggttc ttgggagtga ccgggatggg aatcccgtgt tgctttgcgt 180
actccatcag gtcattgcgg cccttgaacc ggttgtagaa tt 222

<210> 970
<211> 79
<212> DNA
<213> Homo sapien

<400> 970
gcaggggccg cctggccttg ctccgctcca cgaggaggcc gccaaccgca gggccgcgac 60
acggacggga agcaacgga 79

<210> 971
<211> 111
<212> DNA
<213> Homo sapien

<400> 971
ggaaaatgca tctaccccac ccaaccagca gcctcacttt aggctgcctt gtcccgggcg 60
ccccattcgt cagccccacg cctcctccag gatccgggcc cagctcgaat t 111

<210> 972
<211> 609
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(609)
<223> n = A,T,C or G

<400> 972
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg 60

cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa 120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt 180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccagaa 240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat 300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat 360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg 420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct 480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgcttca cctacagcgt 540
cactgtcgat ggctgcacga gtcacaccgg nagcctgggg caagacagtg attgaataca 600
aaaccacca 609

<210> 973
<211> 311
<212> DNA
<213> Homo sapien

<400> 973
ggggtttcca cgtagcccac aatgcccaca accaccatgg gtggtgtctc tacaatggtc 60
acagcctcca ccacctcctt cttgttcacc ttggatcccg gcctgtcgac ttcccgcacg 120
atgtgagtca tgccagcctt gtatcccagg aaggctgtga ggtggaccgg cttggacggg 180
tcatccttag ggaagctctt caccttccca cgatgcctgc tgctgcgctt ccgaggcagg 240
aagccgaggg acccatgtct gggagcggag aactttctgt gagacatcac gcgtcgacgc 300
ggccgcgaat t 311

<210> 974
<211> 180
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(180)
<223> n = A,T,C or G

<400> 974
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg 60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcnagagcg 120
tgtgtcnctg cancgacnag gatggcactg gatggcttag anaaactagc accacgtcga 180

<210> 975
<211> 187
<212> DNA
<213> Homo sapien

<400> 975
gcaccagccc cggggactat gtgctcagcg tctcagagaa ctcgcgcgtc tcccactaca 60
tcatcaacag cagcggcccg cgcccgccgg tgccaccgtc gcccgcccag cctccgcccg 120
gggtgagccc ctccagactc cgaataggag atcaagagtt tgattcattg cctgctttac 180
tggaatt 187

<210> 976
<211> 59
<212> DNA
<213> Homo sapien

<400> 976
ctggttccgc tgcatggacc tggacgggga cggcgccctg tccatgttcg agctcgagt 59

<210> 977
<211> 66
<212> DNA
<213> Homo sapien

<400> 977
ggtccagagc tcccaggttt ccaggttgca gtccctccag tcccagagct cccagggttt 60
cggttt 66

<210> 978
<211> 114
<212> DNA
<213> Homo sapien

<400> 978
ggagctgatg cgggaaccgg gcccactcgt gtaggagcgg ctgctgaagg cccgggggcc 60
agaggtggac accttgtagg acttctgggt cacccgtcga cgcggccgcg aatt 114

<210> 979
<211> 177
<212> DNA
<213> Homo sapien

<400> 979
gacattttat gacctctccc aatagggca gaggtgagca cccctggtga aaagttaaga 60
ctcagtgagt ataaatacgc caagaagagc tgtggcttct ttcactggtg tcctcagaaa 120
ggctgtgagc agtgttggtg gcatacctgt cacagcatct agcaaagcac ctgaatt 177

<210> 980
<211> 188
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(188)
<223> n = A,T,C or G

<400> 980
ggagctgatg cgggaaccgg gcccactcgt gtaggagcgg ntgctgaagg cccgggggcc 60
agaggtggac accttgtagg acttctgggt caccctgatg gacatggtag aggctggagt 120
ggaggcaggc gggccgaacc aggcggagat cctagaagga gcggagaagg tcgacgcggc 180
cgcgaatt 188

<210> 981
<211> 184
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(184)
<223> n = A,T,C or G

<400> 981
gggccccagg aggccgggtg ggcacaggcc atggcgaggg tggggcacaa gagccccaga 60
ccccggcggc tttgcactga tgggctgcgg ntgggcacag gccatagtga gggggcatg 120
agagccccag accgggcggc tttgcactga tgagctgcag ggcaggtcga cgcggccgcg 180

aatt 184

<210> 982
<211> 98
<212> DNA
<213> Homo sapien

<400> 982
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac cgaaccctga accctacggt 60
cccgacccgc gggcgaggcc gggtacctgg gctgggat 98

<210> 983
<211> 425
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(425)
<223> n = A,T,C or G

<400> 983
gccggatatg gtcctgccgg tggcagccta tgggctgatc ctgatggcca tgctgtggcg 60
cggcctggcc cagggcggga gtgccggctg gggcgcgctg ctcttcacgc tctctgatgg 120
cgtgctggcc tgggacacct tcgcccagcc cctgccccat gcccncctgg tgatcatgac 180
cacctactat gctgcccagc tcctcatcac actgtcagcc ctcaggagcc cggtgcccaa 240
gactgactga ctagggagct tgaagggccg gtgttcaggc cctctcctcc tgcaaggacc 300
tgggcctccc agcccagccc agcctgagaa ataccctcag cagcgaagct tcctgacgcc 360
tgtctgcagg cgccgctgcc gccgtcgctt ctggctgaag acgtttgagg acgatttgcg 420
gaatt 425

<210> 984
<211> 148
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(148)
<223> n = A,T,C or G

<400> 984
tcctnagcca gggagacagg gaccaggcag cacaggcctg ccagcaggag gatgccccac 60
gagacagaag acggcattgt cgattcactg tcccaggtca gtggtgggtc gacgcggccg 120
cgaattccac cacactggac tagtggat 148

<210> 985
<211> 461
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(461)
<223> n = A,T,C or G

<400> 985
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg 60

cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa 120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt 180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccanaa 240
gaactggtac atcancaaga accccaagga caagaggcat gtctggttcg gcgagagcat 300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat 360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc canaacatca cctaccactg 420
caagaacagc gtggcctaca tggaccanca nactggcaac c 461

<210> 986
<211> 138
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(138)
<223> n = A,T,C or G

<400> 986
gagcggctgc tgaaggcccg ggggccagag gtggacacct tgtangactt ctgggtcacc 60
ctgatggaca tggtagaggc aggagtggag gcaggcgggc cgaaccaggc ggagatccta 120
gaaggagcgg aggtcgnc 138

<210> 987
<211> 555
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(555)
<223> n = A,T,C or G

<400> 987
gcggccgccc tttttttttt ttttttttag tggtataact atatttattg tgcctgagag 60
gcaaggtgag ggaaaaatct caacagaagc aagtttgggg aaaatctgga gtccccagta 120
aaaagcagga aggtctctgc tgtactcatc acagaatggg agagagggct ctcaatagat 180
cattcccttt gtttctcccc tgggcttctt gagcttctcg aagttcttca ggatgatgtc 240
atataacaca gcataagcat tgcggatctc catgaccatc agccggatgt cccggtactc 300
tgcctcatcc agctcgtgca ccagctgccg ataatcaccc acatggggct gcttggctgc 360
tttagtcact gcatcaccac gctcagagaa atacttagag atttgagtgt ggaagccttc 420
tancttggtg tggaggctgg tcatcagctc aaacaccttc tcctggacag ccactccaaa 480
attgttacca tcctcaatcc gaggtatctg cagctgcaac caggtggtga ccaggttgag 540
ctgctcaatg acatc 555

<210> 988
<211> 318
<212> DNA
<213> Homo sapien

<400> 988
gacggcgcgg gcgacctacg aacagctttg aggaagcccc gacagtggcg gcgtccagtg 60
cctccgaggg cggcgaccgc ggctccgcag cctctcccag ccgctccgcc cggttccggg 120
gagtcggtcg ggacaaaatg gcctcccctc ccccctcagg gcttctcggc cgggacgctc 180
ccacgggcga gcaagcctgc tctgccgtcg aggaggcgca gcgggcgtga ggacagtctc 240
tctcccgagc ggaaactccc tgctagcacg cggcgagggc agcgaagaag gacccctaag 300
tcgacgagct cagttaca 318

<210> 989
<211> 177
<212> DNA
<213> Homo sapien

<400> 989
gacattttat gacctctccc aatagggggca gaggtgagca cccctggtga aaagttaaga 60
ctcagtgagt ataaatacgc caagaagagc tgtggcttct ttcactggtg tcctcagaaa 120
ggctgtgagc agtgttggtg gcatacctgt cacagcatct agcaaagcac ctgaatt 177

<210> 990
<211> 144
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(144)
<223> n = A,T,C or G

<400> 990
gtgagcaccc ntggtgaaaa gttaagactc agtgagtata aatacgccaa gaagagctgt 60
ggcttctttc actggtgtcc tcagaaaggc tgtgagcagt gttggtggca tacctgtcac 120
agcatctagc aaagcacctg aatt 144

<210> 991
<211> 659
<212> DNA
<213> Homo sapien

<400> 991
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg 60
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa 120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt 180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccagaa 240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat 300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat 360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg 420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct 480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgcttca cctacagcgt 540
cactgtcgat ggctgcacga gtcacaccgg agcctggggc aagacagtga ttgaatacaa 600
aaccaccaag acctcccgcc tgcccatcat cgatgtggcc cccttggacg ttggtgccc 659

<210> 992
<211> 226
<212> DNA
<213> Homo sapien

<400> 992
tccgctgcac tgggtttgcc ggattcttgg gcttcccaca tactgcttca cattcaggaa 60
gtttatctcc aacagcctta tttatccact gcttcttatc atttaaggtg tatactccat 120
ctccttctgt gcgcagtttg tagtagttct tacactggta gcgaaccgag tgctccacat 180
agccatgtgc aatctcgggg ggcttcgggc agccgtcatc tgcgat 226

<210> 993
<211> 160
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(160)
<223> n = A,T,C or G

<400> 993
ctcgtgtnng agcgnctgct gaaggcccgg gggccanagg nggacacctt gtacgacttc 60
tgggtcaccc tgatggacat ggtanangct ggagtggagg caggcgggcc gaaccaggcg 120
gagatcctag aaggagcgga ggtcgacgcg gccgcgaatt 160

<210> 994
<211> 622
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(622)
<223> n = A,T,C or G

<400> 994
nagcctganc cagcagatcg agaacatccg gagcccagag ggcagccgca agaaccccgc 60
ccgcacctgc cgtgacctca agatgtgcca ctctgactgg aagagtggag agtactggat 120
tgaccccaac caaggctgca acctggatgc catcaaagtc ttctgcaaca tggagactgg 180
tgagacctgc gtgtacccca ctcagcccag tgtggcccag aagaactggt acatcagcaa 240
gaaccccaag gacaagaggc atgtctggtt cggcgagagc atgaccgatg gattccagtt 300
cgagtatggc ggccagggct ccgaccctgc cgatgtggcc atccagctga ccttcctgcg 360
cctgatgtcc accgaggcct cccagaacat cacctaccac tgcaagaaca gcgtggccta 420
catggaccag cagactggca acctcaagaa ggccctgctc ctccagggct ccaacgagat 480
cgagatccgc gccgagggca acagccgctt cacctacagc gtcactgtcg atggctgcac 540
gagtcacacc ggagcctggg gcaagacagt gattgaatac aaaaccacca agacctcccg 600
cctgcccatc atcgatgtgg cc 622

<210> 995
<211> 158
<212> DNA
<213> Homo sapien

<400> 995
aataagattt tgccagaggg gaaggctcga ttgtgctgtt aataacttaa taatgacaaa 60
ataatgaggt gtatatgctt tacatgcaat gttatatagt gaattgttct gattcttaat 120
tgtaagtctg gttttttat ctgtaagata attgtgtg 158

<210> 996
<211> 295
<212> DNA
<213> Homo sapien

<400> 996
cggccgcgtc gactctcgga gcggagacgg caaatggcgg acttcgacac ctacgacgat 60
cgggcctaca gcagcttcgg cggcggcaga gggtcccgcg gcagtgctgg tggccatggt 120
tcccgtagcc agaaggagtt gcccacagag cccccctaca cagcatacgt aggaaatcta 180
cctttcaata cggttcaggg cgacatagat gctatcttta aggatctcag cataaggagt 240
gtacggctag tcagagacaa agacacagat aaatttaaag gattctgcta tgtag 295

<210> 997
<211> 125

<212> DNA
<213> Homo sapien

<400> 997
cggccgccct tttttttttt ttttttaagg ttttttggct gtaagtttat tcaatgcaaa 60
agaatcctct ccaattttac tgaggtggct gaccacgtcc acgaccaaat ccgcctctaa 120
actgg 125

<210> 998
<211> 152
<212> DNA
<213> Homo sapien

<400> 998
gagctgatgc gggaaccggg cccactcgtg taggagcggc tgctgaaggc ccgggggcca 60
gaggtggaca ccttgtagga cttctgggtc accctgatgg acatggtaga ggctggagtg 120
gaggcaggcg ggccgaacca ggcggagatc ct 152

<210> 999
<211> 119
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(119)
<223> n = A,T,C or G

<400> 999
taaagcaacc actaaaccac ctncagcang agaaagcagc agagagctct tcanacagct 60
cagactctga cagctnngag gatgatgaag ctccttctaa gccagctggt accaccaag 119

<210> 1000
<211> 209
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(209)
<223> n = A,T,C or G

<400> 1000
ccctcnngag gcggagagga tcatgtccgg gaactgcggg gtagtagcga tctgggttac 60
ccagccgttg tggccccttga gggtgccacg aagggtcatc tgctcagtca tggcggcggc 120
gagagcgtgt gtcgctgcag cgacgaggat ggcactggat ggcttagaga aactagcacc 180
acaacctctc ctgcgtcgac gcggccgcg 209

<210> 1001
<211> 390
<212> DNA
<213> Homo sapien

<400> 1001
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc 60
agccgcaaga acccccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag 120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc 180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag 240

aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg 300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc 360
cagctgacct tcctgcgcct gatgtccacc 390

<210> 1002
<211> 613
<212> DNA
<213> Homo sapien

<400> 1002
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc 60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag 120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc 180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag 240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg 300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc 360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc 420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc 480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc 540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa 600
accaccaaga cct 613

<210> 1003
<211> 639
<212> DNA
<213> Homo sapien

<400> 1003
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc 60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag 120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc 180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag 240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg 300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc 360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc 420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc 480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc 540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa 600
accaccaaga cctcccgcct gcccatcatc gatgtggcc 639

<210> 1004
<211> 85
<212> DNA
<213> Homo sapien

<400> 1004
ccgttattcg tcgtggctca agcccggcca cgccgcccca agggctcctc ccgacctccc 60
ggcctgccgc tccggccact gcggg 85

<210> 1005
<211> 636
<212> DNA
<213> Homo sapien

<400> 1005
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc 60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag 120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc 180

```
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag     240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg     300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc     360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc     420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc     480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc     540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa     600
accaccaaga cctcccgcct gcccatcatc gatgtg                               636
```

<210> 1006
<211> 629
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(629)
<223> n = A,T,C or G

<400> 1006
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gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc      60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag     120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc     180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag     240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg     300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc     360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc     420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaangc cctgctcctc     480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc     540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa     600
accaccaaga cctcccgcct gcccatcat                                       629
```

<210> 1007
<211> 575
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(575)
<223> n = A,T,C or G

<400> 1007
```
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc      60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag     120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc     180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag     240
aactggtnca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg     300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc     360
cagctgacct tnctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc     420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc     480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc     540
actgtcgatg gctgcacgag tcacaccgga gcctg                                575
```

<210> 1008
<211> 62
<212> DNA
<213> Homo sapien

<400> 1008
cgatggagcg tgggtaggga gggtccacag tgtccactcg ccgtgtgcga aggttgactc 60
gg 62

<210> 1009
<211> 180
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(180)
<223> n = A,T,C or G

<400> 1009
gagctgatgc gggaaccggg cccactcgtg taggagcggc tgctgaaggc ccgggggcca 60
gaggtggaca ccttgtagga cttctgggtc accctgatgg acatggtaga ggcaggagtg 120
gaggcaggcg ggccgaacca ggcggagatc ctanaaggag cggaggtcga cgcggccgcg 180

<210> 1010
<211> 169
<212> DNA
<213> Homo sapien

<400> 1010
gaggcggcac aggtcacgca tggccagcac ggcagccatg gcgctgcgct cgctcatgtt 60
tctcgccagg taggtctggg ccaggttctt gagtttgaag ctgctggccc cgggcacacg 120
ctcccggatg agaggcaggg cagccaggaa gcccgagatg gcctcctgg 169

<210> 1011
<211> 170
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(170)
<223> n = A,T,C or G

<400> 1011
gagctgatgc gggaaccggg cccactcgtg taggagcggc tgctgaaggc ccgggggcca 60
gaggtggaca ccttgtanna cttctgggtc accctgatgg acatggtaga ggctggagtg 120
gaggcaggcg ggccgaacca ggcggagatc ctagaaggag cggaggtcga 170

<210> 1012
<211> 344
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(344)
<223> n = A,T,C or G

<400> 1012
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc 60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag 120

agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc 180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgg nccanaanaa 240
ctggnncatc ngcangaacc ccnnggacan gaggcntgtc tggttcggcg agagcatgac 300
cnatggattc canttnnagt atggnggcca gggctccgac cctg 344

<210> 1013
<211> 157
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(157)
<223> n = A,T,C or G

<400> 1013
atagaacccc gcccgcacct nncgtgacct caagatgtgc cactctgact ggaagagtgg 60
agagtactgg attgacccca accaaggctg caacctggat gccatcaaag tcttctgcaa 120
catggancact ggtgannccct gcgtgtaccc cactcag 157

<210> 1014
<211> 621
<212> DNA
<213> Homo sapien

<400> 1014
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc 60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag 120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc 180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag 240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg 300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc 360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc 420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc 480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc 540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa 600
accaccaaga cctcccgcct g 621

<210> 1015
<211> 104
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(104)
<223> n = A,T,C or G

<400> 1015
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc 60
agccgcaaga accccgcccg cacctgccgt nctcnagatg tgcc 104

<210> 1016
<211> 101
<212> DNA
<213> Homo sapien

<400> 1016

gctgaccagg cggaaagagg agctgcccat gaagggggc accctgggcg ggatccctgg 60
ggagcccgcc gtggaccacc gagatgtgga tgagctgctg g 101

<210> 1017
<211> 172
<212> DNA
<213> Homo sapien

<400> 1017
acattttatg acctctccca atagggggcag aggtgagcac ccctggtgaa aagttaagac 60
tcagtgagta taaatacgcc aagaagagct gtggcttctt tcactggtgt cctcagaaag 120
gctgtgagca gtgttggtgg catacctgtc acagcatcta gcaaagcacc tg 172

<210> 1018
<211> 637
<212> DNA
<213> Homo sapien

<400> 1018
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc 60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag 120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc 180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag 240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg 300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc 360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc 420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc 480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc 540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa 600
accaccaaga cctcccgcct gcccatcatc gatgtgg 637

<210> 1019
<211> 623
<212> DNA
<213> Homo sapien

<400> 1019
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc 60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag 120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc 180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag 240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg 300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc 360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc 420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc 480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc 540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa 600
accaccaaga cctcccgcct gcc 623

<210> 1020
<211> 233
<212> DNA
<213> Homo sapien

<400> 1020
ggtagagaac cctgcggctg cgctttcggt gcccgcgaga ggcgctgggg cgccccggcag 60
gggccgctgc gggctccggg agagggtcga aggtgaagat ctcaggaccg gagccccgcc 120
ggggtcccgg gatggtggag gggccggggg tcggggcctg caggatggtc atggtcgggt 180

ggcagctgcg agagtgacac atggtgagcc gagcggaggt cgacgcggcc gcg 233

<210> 1021
<211> 180
<212> DNA
<213> Homo sapien

<400> 1021
gagctgatgc gggaaccggg cccactcgtg taggagcggc tgctgaaggc ccgggggcca 60
gaggtggaca ccttgtagga cttctgggtc accctgatgg acatggtaga ggcaggagtg 120
gaggcaggcg ggccgaacca ggcggagatc ctagaaggag cggaggtcga cgcggccgcg 180

<210> 1022
<211> 636
<212> DNA
<213> Homo sapien

<400> 1022
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc 60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag 120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc 180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag 240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg 300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc 360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc 420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc 480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc 540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa 600
accaccaaga cctcccgcct gcccatcatc gatgtg 636

<210> 1023
<211> 162
<212> DNA
<213> Homo sapien

<400> 1023
aggcggagag gatcatgtcc gggaactgcg ggtagtagc gatctgggtt acccagccgt 60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt 120
gtgtcgctgc agcgacgagg atggcacgtc gacgcggccg cg 162

<210> 1024
<211> 124
<212> DNA
<213> Homo sapien

<400> 1024
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac gccgagcagg aggcgccatc 60
atgggagtgg acatccgcca taacaaggac cgaaaggttc ggcgcaagga gcccaagagc 120
cagg 124

<210> 1025
<211> 635
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(635)

<223> n = A,T,C or G

<400> 1025
gcccccaatt ccagctgcca caccacccac ggtgactgca ttagttcgga tgtcatacaa 60
aagctgattg aagcaaccct ctacttttg gtcgtgagcc ttttgcttgg tgcaggtttc 120
attggctgtg ttggtgacgt tgtcattgca acagaatggg ggaaaggcac tgttctcttt 180
gaagtagggt gagtcctcaa aatccgtata gttggtgaag ccacagcact tgagcccttt 240
catggtggtg ttccacactt gagtgaagtc ttcctgggaa ccataatctt tcttgatggc 300
aggcactacc agcaacgtca ggaagtgctc agccattgtg gtgtacacca aggcgaccac 360
agcagctgca acctcagcaa tgaagatgag gaggaggatg aagaagaacg tcacgagggc 420
acacttgctc tcagtcttag caccatagca gcccaggaaa ccaagagcaa agaccacaac 480
gccggctgcg atgaggaagt agcccacgtt gacaaactgc atggcactgg acgacagtgg 540
cccgaagatc ttcagaaagg atgccccatc gattgacacc cagatgccca ctgccaacag 600
ggctgcacca cacagaanga tgagcaaatt gaaga 635

<210> 1026
<211> 355
<212> DNA
<213> Homo sapien

<400> 1026
ccatctgctg tttttctca gcaccttccg tcttttgttc aatacttgag acgaccctcc 60
aagatgacct acgggctcct acaacatttt tataagcaac tgagagaaga ttcctctcct 120
cattggataa ttcagctcct tgctcagtta cagacttcat gcaggctgcc atgtcatcat 180
atcgctcagc ctgctcggcc agtttggcct tctgaaccag ctcattttta tccatgactg 240
gatgttctgt gtccggagtg ggtggtggcg gcggacggac gggctcagca gtctctgggc 300
ggcggcggcg gcagcagcgg cgaggctgag actctgtccc gtcgacgcgg ccgcg 355

<210> 1027
<211> 148
<212> DNA
<213> Homo sapien

<400> 1027
tgccaccctg gtgcccatga ctgtggcctt ggtgcccagg aggggccaga gctggtgggt 60
gctggctgtt cttctccctc tggccctgag cccctggctc tggagctgcc tgtaggggct 120
gaagggccat cccactgcca ttctccgg 148

<210> 1028
<211> 479
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

<400> 1028
ggcgtcctgg tgcttaccac ctggaaactg gtgaggtggt gggagaactc ctggtggacc 60
ctagtggaag ccttccagta atttcttgaa gctgagcgct caggtgagta gggcgacatc 120
tggtggccgg ttgttgaagg tcattgcaga gaggaaggaa gccgaggagg ggagcctgca 180
gtgagggcgt cctggggttc tccggttctc accacccttg ggccacgccg tctagtccac 240
acctgaggag ttggtcaggt agaaggggcg gatgaccgtg cggaagccgt tgaagtgccc 300
tgccgggcag gggaaggagg aggtgctctt cgagctgttg gtgtccaggg cactgggaat 360
cgcagccttc cagccctcga aatcggtgac gtctgccacg aagagccctt cgcagagcat 420
cagggctttg ttttcgtang caatggtgcg atctgagccg ccagacttgg tgaggccca 479

<210> 1029
<211> 64
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(64)
<223> n = A,T,C or G

<400> 1029
gcgtnnatgt agttcttgag cacctcggga atgggcccct cggtcacggc tggcaccgcc 60
tggg 64

<210> 1030
<211> 531
<212> DNA
<213> Homo sapien

<400> 1030
cctgtcagag tggcactggt agaagttcca ggaaccctga actgtaaggg ttcttcatca 60
gtgccaacag gatgacatga aatgatgtac tcagaagtgt cctggaatgg ggcccatgag 120
atggttgtct gagagagagc ttcttgtcct acattcggcg ggtatggtct tggcctatgc 180
cttatggggg tggccgttgt gggcggtgtg gtccgcctaa aaccatgttc ctcaaagatc 240
atttgttgcc caacactggg ttgctgacca gaagtgccag gaagctgaat accatttcca 300
gtgtcatacc cagggtgggt gacgaaaggg gtcttttgaa ctgtggaagg aacatccaag 360
atctctggtc catgaagatt ggggtgtgga agggttacca gttggggaag ctcgtctgtc 420
tttttccttc caatcagggg ctcgctcttc tgattattct tcagggcaat gacataaatt 480
gtatattcgg ttcccggttc caggccagta atagtagcct ctgtgacacc a 531

<210> 1031
<211> 518
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(518)
<223> n = A,T,C or G

<400> 1031
cctgggtggt ggagcgaatg ggccgattcc accggatcct ggagcctggt ttgaacatcc 60
tcatccctgt gttagaccgg atccgatatg tgcagagtct caaggaaatt gtcatcaacg 120
tgcctgagca gtcggctgtg actctcgaca atgtaactct gcaaatcgat ggagtccttt 180
acctgcgcat catggaccct tacaaggcaa gctacggtgt ggaggaccct gagtatgccg 240
tcacccagct agctcaaaca accatgagat cagagctcgg caaactctct ctggacaaag 300
tcttccggga acgggagtcc ctgaatgcca gcattgtgga tgccatcaac caagctgctg 360
actgctgggg tatccgctgc ctccgttatg agatcaagga tatccatgtg ccaccccggg 420
tgaaagagtc tatgcagatg cangtggagg cagagcggcg gaaacgggcc acagttctag 480
agtctgaggg gacccgagag tcggccatca atgtggca 518

<210> 1032
<211> 116
<212> DNA
<213> Homo sapien

<400> 1032
aaatatttat gtggaattaa ttaaaggtag ttggctatat cgctatcatt tcattctttt 60

gacattatgt gaatatttta ctggaaaata agactaataa attgttaaaa gttttt 116

<210> 1033
<211> 241
<212> DNA
<213> Homo sapien

<400> 1033
caagggtcat gatggcagga gtaatcagag gtgttcttgt gttgtgataa gggtggagag 60
gttaaaggag ccacttatta gtaatgttga tagtagaatg atggctaggg tgacttcata 120
tgagattgtt tgggctactg ctcgcagtgc gccgatcagg gcgtagtttg agtttgatgc 180
tcaccctgat cagaggattg agtaaacggc taggctagag gtggctagaa taaataggag 240
g 241

<210> 1034
<211> 234
<212> DNA
<213> Homo sapien

<400> 1034
ccacagctgg gcgcttcacc cagtggtact ttggtgccta ctccattgtg gcgggcgtgt 60
ttgtgtgcct gctggagtac ccccggggga agaggaagaa gggctccacc atggagcgct 120
ggggacagaa gcacatgacc gccgtggtga agctgttcgg gccctttacc aggaattact 180
atgttcgggc cgtcctgcat ctcctgctct cggtgcccgc cggcttcctg ctgg 234

<210> 1035
<211> 434
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(434)
<223> n = A,T,C or G

<400> 1035
gtacaagctt tttttttttt tttttttttt tttttttng gntacggnag cacttttatt 60
tttccttaca caatgacgtg ttgctggggc ctaatgttct cacataacag tanaaaacca 120
aaatttgttg tcatntnttc aaagaatcga naattgcgta caaaaaaaac cttacataaa 180
ttaanaatga atacatttac aggcgtaaat gcaaaccgnt tccaactnaa agcaagtaac 240
agcccacggn gttntggcca aagacatnag ntaanaaagg aaactgggtc ctacggcttg 300
gactttncaa ccctgacaga cccgcaagac aaaacaactg gttnttgcca gcctntanag 360
aaatcccana acactnagcc ctgacacgtt aataccctgc acanatcana ggctgntggc 420
cacacanact cacc 434

<210> 1036
<211> 294
<212> DNA
<213> Homo sapien

<400> 1036
aaagccatgg gaacccagat caccagatcc ggagcctgac tctagcccct gagccacctg 60
ttgccctaac accctgtctg actctctccc gctgcagcag ccagtccctc ctgcactcca 120
gcaactccag ccatcagtca tcttccagat ccttggaaag tccagccaac tcttcctcca 180
gcctccacag ccttggctca gtgtccctgt gtacaagacc cagtgacttc caggctccca 240
gaaaccccac cctaaccatg ggccaaccca gaacacccca ctctccacca ctgg 294

<210> 1037

<211> 547
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(547)
<223> n = A,T,C or G

<400> 1037
aaagatatga acagcttaat tttccgtgtg attatctaat taaaaaagaa aaacnnaaca 60
agcnnaatgt tcaagttaaa aaaaaaacat accgggtgag caatgcacta aaattatcca 120
catgaaaaca aatggtctgt aatcttataa accaacatag catttcactg tcaacaatgt 180
gaaaatttaa tatcttctca aacaggcata agatgaagaa gtgctatttt ttaattgtaa 240
aaggaactta tgtaatgnta aaattacatt ataattttc attccgaatt gacaaatgat 300
ttcaaaaaca aggnatcaaa gtttgactgc aaatagtaat gcaatataat ttcataaaaa 360
tccttcaatt tctatttttt tccttttctg tagttgacat atgaagacca cttcaatttc 420
taaaaaaggg aaccattcca attttccctc cccaagaaaa tgtctcacaa ttacaaagta 480
gaaaaacagc cgttcataaa atgcaaaaaa aanttctgat tttatacatg aaataatttc 540
tagatca 547

<210> 1038
<211> 451
<212> DNA
<213> Homo sapien

<400> 1038
ccactctgcc caggagctgc cgaccatcag gacgcctgca gacatttaca gagcctttgt 60
tgatgttgtg aatggagaat atgtccctcg caaatccatc ctgaagtctc gaagtagaga 120
gaatagtgtg tgtagcgaca ctagtgaaag cagtgctgct gaatttgatg ataggcgggg 180
agttttgagg agtatcagct gcgaagaagc cacttgcagt gacaccagtg agagcatttt 240
ggaagaggaa ccacaagaaa atcaaaagaa acttttgccc ttatcagtaa cacctgaggc 300
tttttctgga actgttatag aaaaagaatt tgtatcacct tccttaacac caccccccagc 360
cattgctcat cccgcactac ccactattcc agaacgaaag gaagttctgt tggaagcatc 420
tgaagaaact ggaaagaggg tttcaaagtt t 451

<210> 1039
<211> 533
<212> DNA
<213> Homo sapien

<400> 1039
ccaagcccgt gcaccgtttt ttgtaaggta tctctttaag cgcctgggac cccaagcgag 60
agtccgaaat tagcagagcg ctaaaaggag gggcccgaag gcagtggggc tttgagctag 120
aagcctcttt ttacctgctt gacaggtaat ttctgtaatt ggttgtgatt gaatttgata 180
gggtagagaa ttaaatgagg gaagctgtgt atacttccta gtaagagcta ttatatgact 240
gattacatta acatcatatg gaaaaaaatt gtcaaaagta ctccgggaaa gcccttaaat 300
agttggtaaa gtacagaaca catgattgtc aatatatgta aatacaggat gagctaggac 360
agagggggccc ttctttcaca ccacttaaat tagttcccac tttaaccttg tttgagattg 420
acttctggag agttaaatgc agatagactt aactctccta agtcaggtga gactgagagc 480
tgactgctac aataattacg gagcccaaat gcagtaaaac agcctgtttt tca 533

<210> 1040
<211> 317
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(317)
<223> n = A,T,C or G

<400> 1040
tgcctgctgg ggattactcg atcaaaacct tccttccctg gctacttccc ttcctcccgg 60
ggccttcctt ttgaggagct ggaggggtgg ggagctagag gccacctatg ccagtgctca 120
aggttactgg gagtgtgggc tgcccttgnt gcctgcaccc ttccctcttc cctctccctc 180
tctctgggac cactgggtac aagagatggg atgctccgac agcgtctnca attatgaaac 240
taatcttaac ccctgtgctg tcagataccc tgtttctgga gtcacatcag tgaggaggga 300
tgtgggtaag aggagca 317

<210> 1041
<211> 407
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(407)
<223> n = A,T,C or G

<400> 1041
ccaagacagt ccacttacat ggatcgtgtc ttcaagcaat ttgtncaagc catggttgag 60
catggacatg aactctctta acatgtantt ctttgggtgc attttgtctg aaccacaatt 120
gtgaaggcag ctcagcttag tgcacaaatt ttaactgttg tatataaagc aaataagtca 180
gcanatgggt gaagaggtcc agaatgatat gcaaaaacta ctttttagag aaacananca 240
actttgtagc aacaaattaa atatagtatt agattgttac ttacgtagat tttattttta 300
ctatgcctta ccaagtacat ccttaaacaa agtagtatgt acatgaaatt gcacttaacc 360
aaaactattg tgtaaaacaa atttttaatt cctcagggtt ttaattt 407

<210> 1042
<211> 519
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(519)
<223> n = A,T,C or G

<400> 1042
ccaccacacc caattccttg ctggtatcat ggcagccgcc acgtgccagg attaccggct 60
acatcatcaa gtatgagaag cctgggtctc ctcccagaga agtggtccct cggccccgcc 120
ctggtgtcac agaggctact attactggcc tggaaccggg aaccgaatat acaatttatg 180
tcattgccct gaagaataat cagaagagcg agcccctgat tggaaggaaa aagacagacg 240
agcttcccca actggtaacc cttccacacc ccaatcttca tggaccagag atcttggatg 300
ttccttccac agttcaaaag acccctttcg tcacccaccc tgggtatgac actggaaatg 360
gtattcagct tcctggcact tctggtcagc aacccagtgt tgggcaacaa atgatctttg 420
aggaacatgg ttttaggcgg accacaccgg cccacaacgg ncacccccat aaaggcatag 480
gccaaagacc atacccgccg aatgtaggac aagaaagct 519

<210> 1043
<211> 294
<212> DNA
<213> Homo sapien

<400> 1043

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ccatgacagc agctactgct tcacatagca gcatacgcca catgttcacc ttcaatattt      60
ttccagtctg tctatctttc tccacacagt agcagctatc atagaactct gtgaaagcag     120
ttgccagctc atatatataa tcacagagag tgtggagaaa taagtcatct aaaatctttt     180
gcagaatctc agggaaccgt aaaatgcacc ggcctagttt ccattccttc tcatgatcca     240
aaagaatctt ggtttctcga gcagcttttt ggagcatttc ttcatcaata ttgg           294

<210> 1044
<211> 384
<212> DNA
<213> Homo sapien

<400> 1044
ccaggcgctc cttgtcggca tcagggaggg tggccttgaa ctgctcatgg gctgtggtca      60
gtccctggat ctcctcaatg gtgtgcacaa tgaaggtgtc ctgcaggtcc tccatggccc     120
cctccatcca gttgttgaag ggtgcagccc gcttggcata ctccaagtac agctggtcaa     180
tggtctccag cagtttctcg gtccgctcca gagcttccct tcgcttctga gttagggccc     240
ccagattgtc ccactggtca cagatctttt ggcaacgggc gttgacactg ggtgagtcat     300
aatagtccag ctcattgagc tcctgtgcga tggcggcaat ctgctccaca cggtcctggt     360
gggcagccag gtcactctcg aagg                                            384

<210> 1045
<211> 456
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(456)
<223> n = A,T,C or G

<400> 1045
aaaactaatg ttacaaatct gtattatcac ttgtatataa atagtatata gctgatcatt      60
aataaggtgt ataagtacaa tgtattctaa aactgttaag caaaaaaaaa aaacaaanna     120
aaaatccaag tgtcctcctc caccactcac gctggtgatc actgtgctct ctgccagctg     180
cgtggagtga cgggaggagg gaatcactgt gtgtgcgaga gtgcttcaga ctcaatttcc     240
aaaataattt tcacccctct aagcatgtaa atatacaaag atggatcctt catagaaatt     300
aaaaaatcaa tttgagctca tttcgaatac agaacaagta tggcacagat ggaagtcctg     360
ccacgtttcc tttaatgatg ctgactcttg tatcacacag gccagcatga agtttcttac     420
tcagacttta caggcatttt ccgtaattca atcagt                               456

<210> 1046
<211> 136
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(136)
<223> n = A,T,C or G

<400> 1046
atnatctgtt tctaaacgaa agctgcngcg gaatgagagt gagccttcag agatgaaagc      60
catggctctg aaaggtggcn gggcagaagg aaccctncgt tcanctaaaa gtgaggagtc     120
tcttacatct ctccat                                                     136

<210> 1047
<211> 453
<212> DNA
```

<213> Homo sapien

<400> 1047
aaaaaaatcc aaatgctggc attgtccaga aaaatttaac aggtttattt ataattatta 60
taaagttgaa ccgctgaaac ttgttcactg aaacatttta acttgcatta atgctttacg 120
tctccgcatt tatattaaaa attcacacac aaatgaaaat ggaaaaactg ccaatacctg 180
atttctgtcc cctatttttc cactcgcaat catatactta ggtacctttt gaccccatgg 240
aaaaaaaata tctaacgttc agaactacca ataacaggaa gaagagaaat tttttttttt 300
tttttgggaa tgaaatgttt cccatcatag tggattctta agcacgttct ccacgtatgc 360
ggcgtgctag ctggatgtct tttggcataa ttgttacacg tttggcatgg atagcacaca 420
ggttggtgtc ttcaaaaagg ccaaccagat agg 453

<210> 1048
<211> 219
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(219)
<223> n = A,T,C or G

<400> 1048
aaaatcacaa acnttaacgg cagtaggcac caccatgtaa aagtgagctc agacgtctct 60
aaaaaatgtt tcctttataa aagcacatgg cggttgaatc ttaaggttaa attttaatat 120
gaaagatcct catgaattaa atagttgatg caatttttaa cgttaattga tataaaaaaa 180
aacaacaaaa ttaggcttgt aaaactgact ttttcatta 219

<210> 1049
<211> 2465
<212> DNA
<213> Homo sapiens

<400> 1049
agcaaataat caatttagca ttacaaaaaa cagggatggt agggaaaata gaaggagaaa 60
actctaaaat aggtgatgat aatgaaaatt taacctttaa attagaagta aatgagctga 120
gtggtaaatt agacaacact aacgaataca atagtaatga tggtaagaaa ttaccccagg 180
gtgaatcacg aagttacgaa gtcatgggaa gtatggaaga aaccttatgc aatatagatg 240
acagagatgg aaatcgcaat gtccatttag aatttacaga aagagagagt aggaaggatg 300
gagaggatga atttgtcaaa gaaatgagag aggaaagaaa atttcagaaa ttgaagaata 360
aagaggaggt tttaaaagcc tccagagaag aaaaagtgtt gatggatgaa ggagcagtac 420
ttaccctggc agccgacctt tcatcagcaa cactggatat tagtaagcaa tggagtaatg 480
tcttcaacat tctgagagaa aatgattttg aacctaaatt tctgtgtgaa gttaaattag 540
catttaaatg tgatggtgaa ataaagacat tttcagatct gcaaagcctt agaaaatttg 600
ccagccaaaa atcttctatg aaagaattac tgaaagatgt actcccacaa aaggaagaaa 660
taaatcaagg aggaagaaaa tatggaattc aagaaaaaag ggataaaacc ctaatagact 720
caaagcatag agctggagaa ataaccagtg atggcttgag cttcctattt cttaaagaag 780
taaaagttgc taagccagag gagatgaaaa acttagagac tcaagaggaa gagttttccg 840
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cacgtagaca aaaagaaatt ccctttagtt atttggttgg ggactctggg aagaaaaagt 1260
tggtgaaaca ccaggtggtg cacaaaaccc aggaggaaga ggaaacagct gtgcccacaa 1320
gtcaaggaac tggcacaccc tgtctgacct tatgttaggc ctctccctca aagtcactag 1380
agatgagtca tgatgagcat aaaaagcatt cacatacaaa tttgagtatt tcaacaggag 1440

tcaccaaact taagaaaaca gaagaaaaga aacacagaac tctgcacaca gaagaactaa 1500
catccaaaga agcagactta acagaggaaa cagaagaaaa cttgagaagt agtgtgatta 1560
atagcatcag agagataaaa gaggagattg gaaatttgaa aagttcccat tcaggtgtct 1620
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caaaaatcaa caagtaaaac gaaaatacac ttctacccag aaggatggac agctaatagc 2400
gtacttgggg atgaggagca aggaatatta cagatattac ctagatgtta ataaagggta 2460
tgttt 2465

<210> 1050
<211> 3120
<212> DNA
<213> Homo sapiens

<400> 1050
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gcaatgaagc cggtataaat gacaaacaag tgtccaaagg cccaagaagt tactaccaaa 120
agctttcaaa caatattggt ttatctttaa agacacatcc atagcatact ttaaaaataa 180
ggaacttgaa caaggagaac cacaagaaaa actaaatctt agaggctgcg aagttgtgcc 240
cgatgtaaat gtagcaggaa gaaaatttgg aatcaagtta ctaatccctg ttgccgatgg 300
tatgaatgaa atgtatttga gatgtgacca tgagaatcaa tacgcccaat ggatggctgc 360
ctgcatgttg gcatcgaagg gcaaaaccat ggcagacagc tcctaccagc cagaggtcct 420
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cagttgacaa ccccaaggtca gaggagtggc cctcagtgtc atctgtccac agtgatacct 1620
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gcttttgtaa atcacaagcc aataatagac ttttttctcc ccctctgttt tttgctgtgt 2160
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gaaggtcaaa agcaatacca gaagtaaagg gaaatatcag acaatatttt attatttttt 2340
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catttttcag ttctcctagg atgcacccct cagggagcct ggccagagtt ccgaggcccg 2460
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cttcagttca acatgcttcc ttagcttttc atagttgtct gacatttcca tgaaaacaaa 3000
ggaaccaact ttgttttaac caaactttgt ttggttacag ttttcagggg agcgtttctt 3060
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<210> 1051
<211> 1745
<212> DNA
<213> Homo sapiens

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cagacgcact gtatcatcaa acggcccgac aaccagcacg tcatcctgaa gcccggggac 15060
ttcaagagcg acccgaagaa caactgcaca ttcttcagct gcgtgaagat ccacaaccag 15120
ctcatctcgt ccgtctccaa catcacctgc cccaactttg atgccagcat ttgcatcccg 15180
ggctccatca cattcatgcc caatggatgc tgcaagacct gcaccccctcg caatgagacc 15240
agggtgccct gctccaccgt ccccgtcacc acggaggttt cgtacgccgg ctgcaccaag 15300
accgtcctca tgaatcattg ctccgggtcc tgcgggacat ttgtcatgta ctcggccaag 15360
gcccaggccc tggaccacag ctgctcctgc tgcaaagagg agaaaaccag ccagcgtgag 15420
gtggtcctga gctgccccaa tggcggctcg ctgacacaca cctacaccca catcgagagc 15480
tgccagtgcc aggacaccgt ctgcgggctc ccccaccggca cctcccgccg ggcccggcgc 15540
tcccctaggc atctggggag cgggtgagcg gggtgggcac agccccccttc actgccctcg 15600
acagctttac ctcccccgga ccctctgagc ctcctaagct cggcttcctc tcttcagata 15660
tttattgtct gagtctttgt tcagtccttg ctttccaata ataaactcag gggacatgc 15720
```

<210> 1059
<211> 440
<212> PRT
<213> Homo sapiens

<400> 1059

```
Met Val Gly Lys Ile Glu Gly Glu Asn Ser Lys Ile Gly Asp Asp Asn
                5                   10                  15

Glu Asn Leu Thr Phe Lys Leu Glu Val Asn Glu Leu Ser Gly Lys Leu
            20                  25                  30

Asp Asn Thr Asn Glu Tyr Asn Ser Asn Asp Gly Lys Lys Leu Pro Gln
        35                  40                  45

Gly Glu Ser Arg Ser Tyr Glu Val Met Gly Ser Met Glu Glu Thr Leu
    50                  55                  60

Cys Asn Ile Asp Asp Arg Asp Gly Asn Arg Asn Val His Leu Glu Phe
65                  70                  75                  80

Thr Glu Arg Glu Ser Arg Lys Asp Gly Glu Asp Glu Phe Val Lys Glu
                85                  90                  95

Met Arg Glu Glu Arg Lys Phe Gln Lys Leu Lys Asn Lys Glu Glu Val
            100                 105                 110
```

```
Leu Lys Ala Ser Arg Glu Glu Lys Val Leu Met Asp Glu Gly Ala Val
        115                 120                 125

Leu Thr Leu Ala Ala Asp Leu Ser Ser Ala Thr Leu Asp Ile Ser Lys
    130                 135                 140

Gln Trp Ser Asn Val Phe Asn Ile Leu Arg Glu Asn Asp Phe Glu Pro
145                 150                 155                 160

Lys Phe Leu Cys Glu Val Lys Leu Ala Phe Lys Cys Asp Gly Glu Ile
                165                 170                 175

Lys Thr Phe Ser Asp Leu Gln Ser Leu Arg Lys Phe Ala Ser Gln Lys
            180                 185                 190

Ser Ser Met Lys Glu Leu Leu Lys Asp Val Leu Pro Gln Lys Glu Glu
        195                 200                 205

Ile Asn Gln Gly Gly Arg Lys Tyr Gly Ile Gln Glu Lys Arg Asp Lys
    210                 215                 220

Thr Leu Ile Asp Ser Lys His Arg Ala Gly Glu Ile Thr Ser Asp Gly
225                 230                 235                 240

Leu Ser Phe Leu Phe Leu Lys Glu Val Lys Val Ala Lys Pro Glu Glu
                245                 250                 255

Met Lys Asn Leu Glu Thr Gln Glu Glu Glu Phe Ser Glu Leu Glu Glu
            260                 265                 270

Leu Asp Glu Glu Ala Ser Gly Met Glu Asp Asp Glu Asp Thr Ser Gly
        275                 280                 285

Leu Glu Glu Glu Glu Glu Glu Pro Ser Gly Leu Glu Glu Glu Glu Glu
    290                 295                 300

Glu Glu Ala Ser Gly Leu Glu Glu Asp Glu Ala Ser Gly Leu Glu Glu
305                 310                 315                 320

Glu Glu Glu Gln Thr Ser Glu Gln Asp Ser Thr Phe Gln Gly His Thr
                325                 330                 335

Leu Val Asp Ala Lys His Glu Val Glu Ile Thr Ser Asp Gly Met Glu
            340                 345                 350

Thr Thr Phe Ile Asp Ser Val Glu Asp Ser Glu Ser Glu Glu Glu Glu
        355                 360                 365

Glu Gly Lys Ser Ser Glu Thr Gly Lys Val Lys Thr Thr Ser Leu Thr
    370                 375                 380

Glu Lys Lys Ala Ser Arg Arg Gln Lys Glu Ile Pro Phe Ser Tyr Leu
385                 390                 395                 400

Val Gly Asp Ser Gly Lys Lys Lys Leu Val Lys His Gln Val Val His
                405                 410                 415
```

Lys Thr Gln Glu Glu Glu Glu Thr Ala Val Pro Thr Ser Gln Gly Thr
420 425 430

Gly Thr Pro Cys Leu Thr Leu Cys
435 440

<210> 1060
<211> 230
<212> PRT
<213> Homo sapiens

<400> 1060
Met Asn Glu Met Tyr Leu Arg Cys Asp His Glu Asn Gln Tyr Ala Gln
5 10 15

Trp Met Ala Ala Cys Met Leu Ala Ser Lys Gly Lys Thr Met Ala Asp
20 25 30

Ser Ser Tyr Gln Pro Glu Val Leu Asn Ile Leu Ser Phe Leu Arg Met
35 40 45

Lys Asn Arg Asn Ser Ala Ser Gln Val Ala Ser Ser Leu Glu Asn Met
50 55 60

Asp Met Asn Pro Glu Cys Phe Val Ser Pro Arg Cys Ala Lys Arg His
65 70 75 80

Lys Ser Lys Gln Leu Ala Ala Arg Ile Leu Glu Ala His Gln Asn Val
85 90 95

Ala Gln Met Pro Leu Val Glu Ala Lys Leu Arg Phe Ile Gln Ala Trp
100 105 110

Gln Ser Leu Pro Glu Phe Gly Leu Thr Tyr Tyr Leu Val Arg Phe Lys
115 120 125

Gly Ser Lys Lys Asp Asp Ile Leu Gly Val Ser Tyr Asn Arg Leu Ile
130 135 140

Lys Ile Asp Ala Ala Thr Gly Ile Pro Val Thr Thr Trp Arg Phe Thr
145 150 155 160

Asn Ile Lys Gln Trp Asn Val Asn Trp Glu Thr Arg Gln Val Val Ile
165 170 175

Glu Phe Asp Gln Asn Val Phe Thr Ala Phe Thr Cys Leu Ser Ala Asp
180 185 190

Cys Lys Ile Val His Glu Tyr Ile Gly Gly Tyr Ile Phe Leu Ser Thr
195 200 205

Arg Ser Lys Asp Gln Asn Glu Thr Leu Asp Glu Asp Leu Phe His Lys
210 215 220

Leu Thr Gly Gly Gln Asp
225 230

<210> 1061
<211> 311
<212> PRT
<213> Homo sapiens

<400> 1061
Met Tyr Val Ser Tyr Leu Leu Asp Lys Asp Val Ser Met Tyr Pro Ser
5 10 15

Ser Val Arg His Ser Gly Gly Leu Asn Leu Ala Pro Gln Asn Phe Val
20 25 30

Ser Pro Pro Gln Tyr Pro Asp Tyr Gly Gly Tyr His Val Ala Ala Ala
35 40 45

Ala Ala Ala Gln Asn Leu Asp Ser Ala Gln Ser Pro Gly Pro Ser Trp
50 55 60

Pro Ala Ala Tyr Gly Ala Pro Leu Arg Glu Asp Trp Asn Gly Tyr Ala
65 70 75 80

Pro Gly Gly Ala Ala Ala Ala Asn Ala Val Ala His Ala Leu Asn Gly
85 90 95

Gly Ser Pro Ala Ala Ala Met Gly Tyr Ser Ser Pro Ala Asp Tyr His
100 105 110

Pro His His His Pro His His His Pro His His Pro Ala Ala Ala Pro
115 120 125

Ser Cys Ala Ser Gly Leu Leu Gln Thr Leu Asn Pro Gly Pro Pro Gly
130 135 140

Pro Ala Ala Thr Ala Ala Ala Glu Gln Leu Ser Pro Gly Gly Gln Arg
145 150 155 160

Arg Asn Leu Cys Glu Trp Met Arg Lys Pro Ala Gln Gln Ser Leu Gly
165 170 175

Ser Gln Val Lys Thr Arg Thr Lys Asp Lys Tyr Arg Val Val Tyr Thr
180 185 190

Asp His Gln Arg Leu Glu Leu Glu Lys Glu Phe His Tyr Ser Arg Tyr
195 200 205

Ile Thr Ile Arg Arg Lys Ala Glu Leu Ala Ala Thr Leu Gly Leu Ser
210 215 220

Glu Arg Gln Val Lys Ile Trp Phe Gln Asn Arg Arg Ala Lys Glu Arg
225 230 235 240

Lys Ile Asn Lys Lys Lys Leu Gln Gln Gln Gln Gln Gln Gln Pro Pro
245 250 255

Gln Pro Pro Pro Pro Pro Pro Gln Pro Pro Gln Pro Gln Pro Gly Pro
260 265 270

```
Leu Arg Ser Val Pro Glu Pro Leu Ser Pro Val Ser Ser Leu Gln Ala
        275                 280                 285

Ser Val Ser Gly Ser Val Pro Gly Val Leu Gly Pro Thr Gly Gly Val
    290                 295                 300

Leu Asn Pro Thr Val Thr Gln
305                 310


<210> 1062
<211> 237
<212> PRT
<213> Homo sapiens

<400> 1062
Met Ala Gly Val Ser Ala Cys Ile Lys Tyr Ser Met Phe Thr Phe Asn
                  5                  10                  15

Phe Leu Phe Trp Leu Cys Gly Ile Leu Ile Leu Ala Leu Ala Ile Trp
             20                  25                  30

Val Arg Val Ser Asn Asp Ser Gln Ala Ile Phe Gly Ser Glu Asp Val
         35                  40                  45

Gly Ser Ser Ser Tyr Val Ala Val Asp Ile Leu Ile Ala Val Gly Ala
     50                  55                  60

Ile Ile Met Ile Leu Gly Phe Leu Gly Cys Cys Gly Ala Ile Lys Glu
 65                  70                  75                  80

Ser Arg Cys Met Leu Leu Leu Phe Phe Ile Gly Leu Leu Leu Ile Leu
                 85                  90                  95

Leu Leu Gln Val Ala Thr Gly Ile Leu Gly Ala Val Phe Lys Ser Lys
            100                 105                 110

Ser Asp Arg Ile Val Asn Glu Thr Leu Tyr Glu Asn Thr Lys Leu Leu
        115                 120                 125

Ser Ala Thr Gly Glu Ser Glu Lys Gln Phe Gln Glu Ala Ile Ile Val
    130                 135                 140

Phe Gln Glu Glu Phe Lys Cys Cys Gly Leu Val Asn Gly Ala Ala Asp
145                 150                 155                 160

Trp Gly Asn Asn Phe Gln His Tyr Pro Glu Leu Cys Ala Cys Leu Asp
                165                 170                 175

Lys Gln Arg Pro Cys Gln Ser Tyr Asn Gly Lys Gln Val Tyr Lys Glu
            180                 185                 190

Thr Cys Ile Ser Phe Ile Lys Asp Phe Leu Ala Lys Asn Leu Ile Ile
        195                 200                 205

Val Ile Gly Ile Ser Phe Gly Leu Ala Val Ile Glu Ile Leu Gly Leu
    210                 215                 220
```

Val Phe Ser Met Val Leu Tyr Cys Gln Ile Gly Asn Lys
225 230 235

<210> 1063
<211> 80
<212> PRT
<213> Homo sapiens

<400> 1063
Met Ala Ala Arg Ala Leu Cys Met Leu Gly Leu Val Leu Ala Leu Leu
5 10 15

Ser Ser Ser Ser Ala Glu Glu Tyr Val Gly Leu Ser Ala Asn Gln Cys
20 25 30

Ala Val Pro Ala Lys Asp Arg Val Asp Cys Gly Tyr Pro His Val Thr
35 40 45

Pro Lys Glu Cys Asn Asn Arg Gly Cys Cys Phe Asp Ser Arg Ile Pro
50 55 60

Gly Val Pro Trp Cys Phe Lys Pro Leu Gln Glu Ala Glu Cys Thr Phe
65 70 75 80

<210> 1064
<211> 323
<212> PRT
<213> Homo sapiens

<400> 1064
Met Ala Tyr Val Pro Ala Pro Gly Tyr Gln Pro Thr Tyr Asn Pro Thr
5 10 15

Leu Pro Tyr Tyr Gln Pro Ile Pro Gly Gly Leu Asn Val Gly Met Ser
20 25 30

Val Tyr Ile Gln Gly Val Ala Ser Glu His Met Lys Arg Phe Phe Val
35 40 45

Asn Phe Val Val Gly Gln Asp Pro Gly Ser Asp Val Ala Phe His Phe
50 55 60

Asn Pro Arg Phe Asp Gly Trp Asp Lys Val Val Phe Asn Thr Leu Gln
65 70 75 80

Gly Gly Lys Trp Gly Ser Glu Glu Arg Lys Arg Ser Met Pro Phe Lys
85 90 95

Lys Gly Ala Ala Phe Glu Leu Val Phe Ile Val Leu Ala Glu His Tyr
100 105 110

Lys Val Val Val Asn Gly Asn Pro Phe Tyr Glu Tyr Gly His Arg Leu
115 120 125

Pro Leu Gln Met Val Thr His Leu Gln Val Asp Gly Asp Leu Gln Leu
130 135 140

```
Gln Ser Ile Asn Phe Ile Gly Gly Gln Pro Leu Arg Pro Gln Gly Pro
145                 150                 155                 160

Pro Met Met Pro Pro Tyr Pro Gly Pro Gly His Cys His Gln Gln Leu
                165                 170                 175

Asn Ser Leu Pro Thr Met Glu Gly Pro Pro Thr Phe Asn Pro Pro Val
            180                 185                 190

Pro Tyr Phe Gly Arg Leu Gln Gly Gly Leu Thr Ala Arg Arg Thr Ile
        195                 200                 205

Ile Ile Lys Gly Tyr Val Pro Pro Thr Gly Lys Ser Phe Ala Ile Asn
    210                 215                 220

Phe Lys Val Gly Ser Ser Gly Asp Ile Ala Leu His Ile Asn Pro Arg
225                 230                 235                 240

Met Gly Asn Gly Thr Val Val Arg Asn Ser Leu Leu Asn Gly Ser Trp
                245                 250                 255

Gly Ser Glu Glu Lys Lys Ile Thr His Asn Pro Phe Gly Pro Gly Gln
            260                 265                 270

Phe Phe Asp Leu Ser Ile Arg Cys Gly Leu Asp Arg Phe Lys Val Tyr
        275                 280                 285

Ala Asn Gly Gln His Leu Phe Asp Phe Ala His Arg Leu Ser Ala Phe
    290                 295                 300

Gln Arg Val Asp Thr Leu Glu Ile Gln Gly Asp Val Thr Leu Ser Tyr
305                 310                 315                 320

Val Gln Ile


<210> 1065
<211> 957
<212> PRT
<213> Homo sapiens

<400> 1065
Arg Asn Arg Pro His Thr Thr Ala Phe Pro Gly Ser Thr Thr Met Pro
                5                   10                  15

Gly Val Ser Gln Glu Ser Thr Ala Ser His Ser Ser Pro Gly Ser Thr
            20                  25                  30

Asp Thr Thr Leu Ser Pro Gly Ser Thr Thr Ala Ser Ser Leu Gly Pro
        35                  40                  45

Glu Ser Thr Thr Phe His Ser Gly Pro Gly Ser Thr Glu Thr Thr Leu
    50                  55                  60

Leu Pro Asp Asn Thr Thr Ala Ser Gly Leu Leu Glu Ala Ser Thr Pro
65                  70                  75                  80
```

```
Val His Ser Ser Thr Gly Ser Pro His Thr Thr Leu Ser Pro Ala Gly
                85                  90                  95

Ser Thr Thr Arg Gln Gly Glu Ser Thr Thr Phe Gln Ser Trp Pro Asn
            100                 105                 110

Ser Lys Asp Thr Thr Pro Ala Pro Pro Thr Thr Thr Ser Ala Phe Val
        115                 120                 125

Glu Leu Ser Thr Thr Ser His Gly Ser Pro Ser Ser Thr Pro Thr Thr
    130                 135                 140

His Phe Ser Ala Ser Ser Thr Thr Leu Gly Arg Ser Glu Glu Ser Thr
145                 150                 155                 160

Thr Val His Ser Ser Pro Val Ala Thr Ala Thr Thr Pro Ser Pro Ala
                165                 170                 175

Arg Ser Thr Thr Ser Gly Leu Val Glu Glu Ser Thr Thr Tyr His Ser
            180                 185                 190

Ser Pro Gly Ser Thr Gln Thr Met His Phe Pro Glu Ser Asp Thr Thr
        195                 200                 205

Ser Gly Arg Gly Glu Glu Ser Thr Thr Ser His Ser Ser Thr Thr His
    210                 215                 220

Thr Ile Ser Ser Ala Pro Ser Thr Thr Ser Ala Leu Val Glu Glu Pro
225                 230                 235                 240

Thr Ser Tyr His Ser Ser Pro Gly Ser Thr Ala Thr Thr His Phe Pro
                245                 250                 255

Asp Ser Ser Thr Thr Ser Gly Arg Ser Glu Glu Ser Thr Ala Ser His
            260                 265                 270

Ser Asn Gln Asp Ala Thr Gly Thr Ile Val Leu Pro Ala Arg Ser Thr
        275                 280                 285

Thr Ser Val Leu Leu Gly Glu Ser Thr Thr Ser Pro Ile Ser Ser Gly
    290                 295                 300

Ser Met Glu Thr Thr Ala Leu Pro Gly Ser Thr Thr Thr Pro Gly Leu
305                 310                 315                 320

Ser Glu Lys Ser Thr Thr Phe His Ser Ser Pro Arg Ser Pro Ala Thr
                325                 330                 335

Thr Leu Ser Pro Ala Ser Thr Thr Ser Ser Gly Val Ser Glu Glu Ser
            340                 345                 350

Thr Thr Ser His Ser Arg Pro Gly Ser Thr His Thr Thr Ala Phe Pro
        355                 360                 365

Asp Ser Thr Thr Thr Pro Gly Leu Ser Arg His Ser Thr Thr Ser His
    370                 375                 380
```

Ser Ser Pro Gly Ser Thr Asp Thr Thr Leu Leu Pro Ala Ser Thr Thr
385 390 395 400

Thr Ser Gly Pro Ser Gln Glu Ser Thr Thr Ser His Ser Ser Pro Gly
405 410 415

Ser Thr Asp Thr Ala Leu Ser Pro Gly Ser Thr Thr Ala Leu Ser Phe
420 425 430

Gly Gln Glu Ser Thr Thr Phe His Ser Ser Pro Gly Ser Thr His Thr
435 440 445

Thr Leu Phe Pro Asp Ser Thr Thr Ser Ser Gly Ile Val Glu Ala Ser
450 455 460

Thr Arg Val His Ser Ser Thr Gly Ser Pro Arg Thr Thr Leu Ser Pro
465 470 475 480

Ala Ser Ser Thr Ser Pro Gly Leu Gln Gly Glu Ser Thr Ala Phe Gln
485 490 495

Thr His Pro Ala Ser Thr His Thr Thr Pro Ser Thr Pro Ser Thr Ala
500 505 510

Thr Ala Pro Val Glu Glu Ser Thr Thr Tyr His Arg Ser Pro Ser Ser
515 520 525

Thr Pro Thr Thr His Phe Pro Ala Ser Ser Thr Thr Ser Gly His Ser
530 535 540

Glu Lys Ser Thr Ile Phe His Ser Ser Pro Asp Ala Ser Gly Thr Thr
545 550 555 560

Pro Ser Ser Ala His Ser Thr Thr Ser Gly Arg Gly Glu Ser Thr Thr
565 570 575

Ser Arg Ile Ser Pro Gly Ser Thr Glu Ile Thr Thr Leu Pro Gly Ser
580 585 590

Thr Thr Thr Pro Gly Leu Ser Glu Ala Ser Thr Thr Phe Tyr Ser Ser
595 600 605

Pro Arg Ser Pro Thr Thr Thr Leu Ser Pro Ala Ser Met Thr Ser Leu
610 615 620

Gly Val Gly Glu Glu Ser Thr Thr Ser Arg Ser Gln Pro Gly Ser Thr
625 630 635 640

His Ser Thr Val Ser Pro Ala Ser Thr Thr Thr Pro Gly Leu Ser Glu
645 650 655

Glu Ser Thr Thr Val Tyr Ser Ser Ser Pro Gly Ser Thr Glu Thr Thr
660 665 670

Val Phe Pro Arg Ser Thr Thr Thr Ser Val Arg Gly Glu Glu Pro Thr
675 680 685

Thr Phe His Ser Arg Pro Ala Ser Thr His Thr Thr Leu Phe Thr Glu

690 695 700

Asp Ser Thr Thr Ser Gly Leu Thr Glu Glu Ser Thr Ala Phe Pro Gly
705 710 715 720

Ser Pro Ala Ser Thr Gln Thr Gly Leu Pro Ala Thr Leu Thr Thr Ala
725 730 735

Asp Leu Gly Glu Glu Ser Thr Thr Phe Pro Ser Ser Ser Gly Ser Thr
740 745 750

Gly Thr Thr Leu Ser Pro Ala Arg Ser Thr Thr Ser Gly Leu Val Gly
755 760 765

Glu Ser Thr Pro Ser Arg Leu Ser Pro Ser Ser Thr Glu Thr Thr Thr
770 775 780

Leu Pro Gly Ser Pro Thr Thr Pro Ser Leu Ser Glu Lys Ser Thr Thr
785 790 795 800

Phe Tyr Thr Ser Pro Arg Ser Pro Asp Ala Thr Leu Ser Pro Ala Thr
805 810 815

Thr Thr Ser Ser Gly Val Ser Glu Glu Ser Ser Thr Ser His Ser Gln
820 825 830

Pro Gly Ser Thr His Thr Thr Ala Phe Pro Asp Ser Thr Thr Thr Ser
835 840 845

Gly Leu Ser Gln Glu Pro Lys Thr Ser His Ser Ser Gln Gly Ser Thr
850 855 860

Glu Ala Thr Leu Ser Pro Gly Ser Thr Thr Ala Ser Ser Leu Gly Gln
865 870 875 880

Gln Ser Thr Thr Phe His Ser Ser Pro Gly Asp Thr Glu Thr Thr Leu
885 890 895

Leu Pro Asp Asp Thr Ile Thr Ser Gly Leu Val Glu Ala Ser Thr Pro
900 905 910

Thr His Ser Ser Thr Gly Ser Leu His Thr Thr Leu Thr Pro Ala Ser
915 920 925

Ser Thr Ser Ala Gly Leu Gln Glu Glu Ser Thr Thr Phe Gln Ser Trp
930 935 940

Pro Ser Ser Ser Asp Thr Thr Pro Ser Pro Pro Gly Pro
945 950 955

<210> 1066
<211> 914
<212> PRT
<213> Homo sapiens

<400> 1066
Met Gly Pro Phe Lys Ser Ser Val Phe Ile Leu Ile Leu His Leu Leu

```
                5                   10                  15

Glu Gly Ala Leu Ser Asn Ser Leu Ile Gln Leu Asn Asn Asn Gly Tyr
            20                  25                  30

Glu Gly Ile Val Val Ala Ile Asp Pro Asn Val Pro Glu Asp Glu Thr
        35                  40                  45

Leu Ile Gln Gln Ile Lys Asp Met Val Thr Gln Ala Ser Leu Tyr Leu
    50                  55                  60

Phe Glu Ala Thr Gly Lys Arg Phe Tyr Phe Lys Asn Val Ala Ile Leu
65                  70                  75                  80

Ile Pro Glu Thr Trp Lys Thr Lys Ala Asp Tyr Val Arg Pro Lys Leu
                85                  90                  95

Glu Thr Tyr Lys Asn Ala Asp Val Leu Val Ala Glu Ser Thr Pro Pro
            100                 105                 110

Gly Asn Asp Glu Pro Tyr Thr Glu Gln Met Gly Asn Cys Gly Glu Lys
        115                 120                 125

Gly Glu Arg Ile His Leu Thr Pro Asp Phe Ile Ala Gly Lys Lys Leu
    130                 135                 140

Ala Glu Tyr Gly Pro Gln Gly Lys Ala Phe Val His Glu Trp Ala His
145                 150                 155                 160

Leu Arg Trp Gly Val Phe Asp Glu Tyr Asn Asn Asp Glu Lys Phe Tyr
                165                 170                 175

Leu Ser Asn Gly Arg Ile Gln Ala Val Arg Cys Ser Ala Gly Ile Thr
            180                 185                 190

Gly Thr Asn Val Val Lys Lys Cys Gln Gly Gly Ser Cys Tyr Thr Lys
        195                 200                 205

Arg Cys Thr Phe Asn Lys Val Thr Gly Leu Tyr Glu Lys Gly Cys Glu
    210                 215                 220

Phe Val Leu Gln Ser Arg Gln Thr Glu Lys Ala Ser Ile Met Phe Ala
225                 230                 235                 240

Gln His Val Asp Ser Ile Val Glu Phe Cys Thr Glu Gln Asn His Asn
                245                 250                 255

Lys Glu Ala Pro Asn Lys Gln Asn Gln Lys Cys Asn Leu Arg Ser Thr
            260                 265                 270

Trp Glu Val Ile Arg Asp Ser Glu Asp Phe Lys Lys Thr Thr Pro Met
        275                 280                 285

Thr Thr Gln Pro Pro Asn Pro Thr Phe Ser Leu Leu Gln Ile Gly Gln
    290                 295                 300

Arg Ile Val Cys Leu Val Leu Asp Lys Ser Gly Ser Met Ala Thr Gly
305                 310                 315                 320
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```
Asn Arg Leu Asn Arg Leu Asn Gln Ala Gly Gln Leu Phe Leu Leu Gln
                325                 330                 335

Thr Val Glu Leu Gly Ser Trp Val Gly Met Val Thr Phe Asp Ser Ala
            340                 345                 350

Ala His Val Gln Ser Glu Leu Ile Gln Ile Asn Ser Gly Ser Asp Arg
        355                 360                 365

Asp Thr Leu Ala Lys Arg Leu Pro Ala Ala Ala Ser Gly Gly Thr Ser
    370                 375                 380

Ile Cys Ser Gly Leu Arg Ser Ala Phe Thr Val Ile Arg Lys Lys Tyr
385                 390                 395                 400

Pro Thr Asp Gly Ser Glu Ile Val Leu Leu Thr Asp Gly Glu Asp Asn
                405                 410                 415

Thr Ile Ser Gly Cys Phe Asn Glu Val Lys Gln Ser Gly Ala Ile Ile
            420                 425                 430

His Thr Val Ala Leu Gly Pro Ser Ala Ala Gln Glu Leu Glu Glu Leu
        435                 440                 445

Ser Lys Met Thr Gly Gly Leu Gln Thr Tyr Ala Ser Asp Gln Val Gln
    450                 455                 460

Asn Asn Gly Leu Ile Asp Ala Phe Gly Ala Leu Ser Ser Gly Asn Gly
465                 470                 475                 480

Ala Val Ser Gln Arg Ser Ile Gln Leu Glu Ser Lys Gly Leu Thr Leu
                485                 490                 495

Gln Asn Ser Gln Trp Met Asn Gly Thr Val Ile Val Asp Ser Thr Val
            500                 505                 510

Gly Lys Asp Thr Leu Phe Leu Ile Thr Trp Thr Thr Gln Pro Pro Gln
        515                 520                 525

Ile Leu Leu Trp Asp Pro Ser Gly Gln Lys Gln Gly Gly Phe Val Val
    530                 535                 540

Asp Lys Asn Thr Lys Met Ala Tyr Leu Gln Ile Pro Gly Ile Ala Lys
545                 550                 555                 560

Val Gly Thr Trp Lys Tyr Ser Leu Gln Ala Ser Ser Gln Thr Leu Thr
                565                 570                 575

Leu Thr Val Thr Ser Arg Ala Ser Asn Ala Thr Leu Pro Pro Ile Thr
            580                 585                 590

Val Thr Ser Lys Thr Asn Lys Asp Thr Ser Lys Phe Pro Ser Pro Leu
        595                 600                 605

Val Val Tyr Ala Asn Ile Arg Gln Gly Ala Ser Pro Ile Leu Arg Ala
    610                 615                 620
```

```
Ser Val Thr Ala Leu Ile Glu Ser Val Asn Gly Lys Thr Val Thr Leu
625                 630                 635                 640

Glu Leu Leu Asp Asn Gly Ala Gly Ala Asp Ala Thr Lys Asp Asp Gly
                645                 650                 655

Val Tyr Ser Arg Tyr Phe Thr Thr Tyr Asp Thr Asn Gly Arg Tyr Ser
            660                 665                 670

Val Lys Val Arg Ala Leu Gly Gly Val Asn Ala Ala Arg Arg Arg Val
        675                 680                 685

Ile Pro Gln Gln Ser Gly Ala Leu Tyr Ile Pro Gly Trp Ile Glu Asn
    690                 695                 700

Asp Glu Ile Gln Trp Asn Pro Pro Arg Pro Glu Ile Asn Lys Asp Asp
705                 710                 715                 720

Val Gln His Lys Gln Val Cys Phe Ser Arg Thr Ser Ser Gly Gly Ser
                725                 730                 735

Phe Val Ala Ser Asp Val Pro Asn Ala Pro Ile Pro Asp Leu Phe Pro
            740                 745                 750

Pro Gly Gln Ile Thr Asp Leu Lys Ala Glu Ile His Gly Gly Ser Leu
        755                 760                 765

Ile Asn Leu Thr Trp Thr Ala Pro Gly Asp Asp Tyr Asp His Gly Thr
    770                 775                 780

Ala His Lys Tyr Ile Ile Arg Ile Ser Thr Ser Ile Leu Asp Leu Arg
785                 790                 795                 800

Asp Lys Phe Asn Glu Ser Leu Gln Val Asn Thr Thr Ala Leu Ile Pro
                805                 810                 815

Lys Glu Ala Asn Ser Glu Glu Val Phe Leu Phe Lys Pro Glu Asn Ile
            820                 825                 830

Thr Phe Glu Asn Gly Thr Asp Leu Phe Ile Ala Ile Gln Ala Val Asp
        835                 840                 845

Lys Val Asp Leu Lys Ser Glu Ile Ser Asn Ile Ala Arg Val Ser Leu
    850                 855                 860

Phe Ile Pro Pro Gln Thr Pro Pro Glu Thr Pro Ser Pro Asp Glu Thr
865                 870                 875                 880

Ser Ala Pro Cys Pro Asn Ile His Ile Asn Ser Thr Ile Pro Gly Ile
                885                 890                 895

His Ile Leu Lys Ile Met Trp Lys Trp Ile Gly Glu Leu Gln Leu Ser
            900                 905                 910

Ile Ala
```

<210> 1067
<211> 585
<212> PRT
<213> Homo sapiens

<400> 1067
Thr Leu Ser Pro Ala Ser Met Arg Ser Ser Ser Ile Ser Gly Glu Pro
5 10 15

Thr Ser Leu Tyr Ser Gln Ala Glu Ser Thr His Thr Thr Ala Phe Pro
20 25 30

Ala Ser Thr Thr Thr Ser Gly Leu Ser Gln Glu Ser Thr Thr Phe His
35 40 45

Ser Lys Pro Gly Ser Thr Glu Thr Thr Leu Ser Pro Gly Ser Ile Thr
50 55 60

Thr Ser Ser Phe Ala Gln Glu Phe Thr Thr Pro His Ser Gln Pro Gly
65 70 75 80

Ser Ala Leu Ser Thr Val Ser Pro Ala Ser Thr Thr Val Pro Gly Leu
85 90 95

Ser Glu Glu Ser Thr Thr Phe Tyr Ser Ser Pro Gly Ser Thr Glu Thr
100 105 110

Thr Ala Phe Ser His Ser Asn Thr Met Ser Ile His Ser Gln Gln Ser
115 120 125

Thr Pro Phe Pro Asp Ser Pro Gly Phe Thr His Thr Val Leu Pro Ala
130 135 140

Thr Leu Thr Thr Thr Asp Ile Gly Gln Glu Ser Thr Ala Phe His Ser
145 150 155 160

Ser Ser Asp Ala Thr Gly Thr Thr Pro Leu Pro Ala Arg Ser Thr Ala
165 170 175

Ser Asp Leu Val Gly Glu Pro Thr Thr Phe Tyr Ile Ser Pro Ser Pro
180 185 190

Thr Tyr Thr Thr Leu Phe Pro Ala Ser Ser Ser Thr Ser Gly Leu Thr
195 200 205

Glu Glu Ser Thr Thr Phe His Thr Ser Pro Ser Phe Thr Ser Thr Ile
210 215 220

Val Ser Thr Glu Ser Leu Glu Thr Leu Ala Pro Gly Leu Cys Gln Glu
225 230 235 240

Gly Gln Ile Trp Asn Gly Lys Gln Cys Val Cys Pro Gln Gly Tyr Val
245 250 255

Gly Tyr Gln Cys Leu Ser Pro Leu Glu Ser Phe Pro Val Glu Thr Pro
260 265 270

Glu Lys Leu Asn Ala Thr Leu Gly Met Thr Val Lys Val Thr Tyr Arg

```
        275                 280                 285

Asn Phe Thr Glu Lys Met Asn Asp Ala Ser Ser Gln Glu Tyr Gln Asn
    290                 295                 300

Phe Ser Thr Leu Phe Lys Asn Arg Met Asp Val Val Leu Lys Gly Asp
305                 310                 315                 320

Asn Leu Pro Gln Tyr Arg Gly Val Asn Ile Arg Arg Leu Leu Asn Gly
                325                 330                 335

Ser Ile Val Val Lys Asn Asp Val Ile Leu Glu Ala Asp Tyr Thr Leu
            340                 345                 350

Glu Tyr Glu Glu Leu Phe Glu Asn Leu Ala Glu Ile Val Lys Ala Lys
        355                 360                 365

Ile Met Asn Glu Thr Arg Thr Thr Leu Leu Asp Pro Asp Ser Cys Arg
    370                 375                 380

Lys Ala Ile Leu Cys Tyr Ser Glu Glu Asp Thr Phe Val Asp Ser Ser
385                 390                 395                 400

Val Thr Pro Gly Phe Asp Phe Gln Glu Gln Cys Thr Gln Lys Ala Ala
                405                 410                 415

Glu Gly Tyr Thr Gln Phe Tyr Tyr Val Asp Val Leu Asp Gly Lys Leu
            420                 425                 430

Ala Cys Val Asn Lys Cys Thr Lys Gly Thr Lys Ser Gln Met Asn Cys
        435                 440                 445

Asn Leu Gly Thr Cys Gln Leu Gln Arg Ser Gly Pro Arg Cys Leu Cys
    450                 455                 460

Pro Asn Thr Asn Thr His Trp Tyr Trp Gly Glu Thr Cys Glu Phe Asn
465                 470                 475                 480

Ile Ala Lys Ser Leu Val Tyr Gly Ile Val Gly Ala Val Met Ala Val
                485                 490                 495

Leu Leu Leu Ala Leu Ile Ile Leu Ile Ile Leu Phe Ser Leu Ser Gln
            500                 505                 510

Arg Lys Arg His Arg Glu Gln Tyr Asp Val Pro Gln Glu Trp Arg Lys
        515                 520                 525

Glu Gly Thr Pro Gly Ile Phe Gln Lys Thr Ala Ile Trp Glu Asp Gln
    530                 535                 540

Asn Leu Arg Glu Ser Arg Phe Gly Leu Glu Asn Ala Tyr Asn Asn Phe
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Arg Pro Thr Leu Glu Thr Val Asp Ser Gly Thr Glu Leu His Ile Gln
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Arg Pro Glu Met Val Ala Ser Thr Val
            580                 585
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<211> 5179
<212> PRT
<213> Homo sapiens

<400> 1068
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Leu Ala Gly Gly Ser Glu Leu Gln Thr Glu Gly Arg Thr Arg Tyr His
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Gly Arg Asn Val Cys Ser Thr Trp Gly Asn Phe His Tyr Lys Thr Phe
35 40 45

Asp Gly Asp Val Phe Arg Phe Pro Gly Leu Cys Asp Tyr Asn Phe Ala
50 55 60

Ser Asp Cys Arg Gly Ser Tyr Lys Glu Phe Ala Val His Leu Lys Arg
65 70 75 80

Gly Pro Gly Gln Ala Glu Ala Pro Ala Gly Val Glu Ser Ile Leu Leu
85 90 95

Thr Ile Lys Asp Asp Thr Ile Tyr Leu Thr Arg His Leu Ala Val Leu
100 105 110

Asn Gly Ala Val Val Ser Thr Pro His Tyr Ser Pro Gly Leu Leu Ile
115 120 125

Glu Lys Ser Asp Ala Tyr Thr Lys Val Tyr Ser Arg Ala Gly Leu Thr
130 135 140

Leu Met Trp Asn Arg Glu Asp Ala Leu Met Leu Glu Leu Asp Thr Lys
145 150 155 160

Phe Arg Asn His Thr Cys Gly Leu Cys Gly Asp Tyr Asn Gly Leu Gln
165 170 175

Ser Tyr Ser Glu Phe Leu Ser Asp Gly Val Leu Phe Ser Pro Leu Glu
180 185 190

Phe Gly Asn Met Gln Lys Ile Asn Gln Pro Asp Val Val Cys Glu Asp
195 200 205

Pro Glu Glu Glu Val Ala Pro Ala Ser Cys Ser Glu His Arg Ala Glu
210 215 220

Cys Glu Arg Leu Leu Thr Ala Glu Ala Phe Ala Asp Cys Gln Asp Leu
225 230 235 240

Val Pro Leu Glu Pro Tyr Leu Arg Ala Cys Gln Gln Asp Arg Cys Arg
245 250 255

Cys Pro Gly Gly Asp Thr Cys Val Cys Ser Thr Val Ala Glu Phe Ser
260 265 270

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Arg Gln Cys Ser His Ala Gly Gly Arg Pro Gly Asn Trp Arg Thr Ala
        275                 280                 285

Thr Leu Cys Pro Lys Thr Cys Pro Gly Asn Leu Val Tyr Leu Glu Ser
    290                 295                 300

Gly Ser Pro Cys Met Asp Thr Cys Ser His Leu Glu Val Ser Ser Leu
305                 310                 315                 320

Cys Glu Glu His Arg Met Asp Gly Cys Phe Cys Pro Glu Gly Thr Val
                325                 330                 335

Tyr Asp Asp Ile Gly Asp Ser Gly Cys Val Pro Val Ser Gln Cys His
            340                 345                 350

Cys Arg Leu His Gly His Leu Tyr Thr Pro Gly Gln Glu Ile Thr Asn
        355                 360                 365

Asp Cys Glu Gln Cys Val Cys Asn Ala Gly Arg Trp Val Cys Lys Asp
    370                 375                 380

Leu Pro Cys Pro Gly Thr Cys Ala Leu Glu Gly Gly Ser His Ile Thr
385                 390                 395                 400

Thr Phe Asp Gly Lys Thr Tyr Thr Phe His Gly Asp Cys Tyr Tyr Val
                405                 410                 415

Leu Ala Lys Gly Asp His Asn Asp Ser Tyr Ala Leu Leu Gly Glu Leu
            420                 425                 430

Ala Pro Cys Gly Ser Thr Asp Lys Gln Thr Cys Leu Lys Thr Val Val
        435                 440                 445

Leu Leu Ala Asp Lys Lys Lys Asn Ala Val Val Phe Lys Ser Asp Gly
    450                 455                 460

Ser Val Leu Leu Asn Gln Leu Gln Val Asn Leu Pro His Val Thr Ala
465                 470                 475                 480

Ser Phe Ser Val Phe Arg Pro Ser Ser Tyr His Ile Met Val Ser Met
                485                 490                 495

Ala Ile Gly Val Arg Leu Gln Val Gln Leu Ala Pro Val Met Gln Leu
            500                 505                 510

Phe Val Thr Leu Asp Gln Ala Ser Gln Gly Gln Val Gln Gly Leu Cys
        515                 520                 525

Gly Asn Phe Asn Gly Leu Glu Gly Asp Asp Phe Lys Thr Ala Ser Gly
    530                 535                 540

Leu Val Glu Ala Thr Gly Ala Gly Phe Ala Asn Thr Trp Lys Ala Gln
545                 550                 555                 560

Ser Thr Cys His Asp Lys Leu Asp Trp Leu Asp Asp Pro Cys Ser Leu
                565                 570                 575
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Asn Ile Glu Ser Ala Asn Tyr Ala Glu His Trp Cys Ser Leu Leu Lys
580 585 590

Lys Thr Glu Thr Pro Phe Gly Arg Cys His Ser Ala Val Asp Pro Ala
595 600 605

Glu Tyr Tyr Lys Arg Cys Lys Tyr Asp Thr Cys Asn Cys Gln Asn Asn
610 615 620

Glu Asp Cys Leu Cys Ala Ala Leu Ser Ser Tyr Ala Arg Ala Cys Thr
625 630 635 640

Ala Lys Gly Val Met Leu Trp Gly Trp Arg Glu His Val Cys Asn Lys
645 650 655

Asp Val Gly Ser Cys Pro Asn Ser Gln Val Phe Leu Tyr Asn Leu Thr
660 665 670

Thr Cys Gln Gln Thr Cys Arg Ser Leu Ser Glu Ala Asp Ser His Cys
675 680 685

Leu Glu Gly Phe Ala Pro Val Asp Gly Cys Gly Cys Pro Asp His Thr
690 695 700

Phe Leu Asp Glu Lys Gly Arg Cys Val Pro Leu Ala Lys Cys Ser Cys
705 710 715 720

Tyr His Arg Gly Leu Tyr Leu Glu Ala Gly Asp Val Val Val Arg Gln
725 730 735

Glu Glu Arg Cys Val Cys Arg Asp Gly Arg Leu His Cys Arg Gln Ile
740 745 750

Arg Leu Ile Gly Gln Ser Cys Thr Ala Pro Lys Ile His Met Asp Cys
755 760 765

Ser Asn Leu Thr Ala Leu Ala Thr Ser Lys Pro Arg Ala Leu Ser Cys
770 775 780

Gln Thr Leu Ala Ala Gly Tyr Tyr His Thr Glu Cys Val Ser Gly Cys
785 790 795 800

Val Cys Pro Asp Gly Leu Met Asp Asp Gly Arg Gly Gly Cys Val Val
805 810 815

Glu Lys Glu Cys Pro Cys Val His Asn Asn Asp Leu Tyr Ser Ser Gly
820 825 830

Ala Lys Ile Lys Val Asp Cys Asn Thr Cys Thr Cys Lys Arg Gly Arg
835 840 845

Trp Val Cys Thr Gln Ala Val Cys His Gly Thr Cys Ser Ile Tyr Gly
850 855 860

Ser Gly His Tyr Ile Thr Phe Asp Gly Lys Tyr Tyr Asp Phe Asp Gly
865 870 875 880

His Cys Ser Tyr Val Ala Val Gln Asp Tyr Cys Gly Gln Asn Ser Ser

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                885                 890                 895

Leu Gly Ser Phe Ser Ile Ile Thr Glu Asn Val Pro Cys Gly Thr Thr
            900                 905                 910

Gly Val Thr Cys Ser Lys Ala Ile Lys Ile Phe Met Gly Arg Thr Glu
        915                 920                 925

Leu Lys Leu Glu Asp Lys His Arg Val Val Ile Gln Arg Asp Glu Gly
    930                 935                 940

His His Val Ala Tyr Thr Thr Arg Glu Val Gly Gln Tyr Leu Val Val
945                 950                 955                 960

Glu Ser Ser Thr Gly Ile Ile Val Ile Trp Asp Lys Arg Thr Thr Val
                965                 970                 975

Phe Ile Lys Leu Ala Pro Ser Tyr Lys Gly Thr Val Cys Gly Leu Cys
            980                 985                 990

Gly Asn Phe Asp His Arg Ser Asn Asn Asp Phe Thr Thr Arg Asp His
        995                 1000                1005

Met Val Val Ser Ser Glu Leu Asp Phe Gly Asn Ser Trp Lys Glu Ala
    1010                1015                1020

Pro Thr Cys Pro Asp Val Ser Thr Asn Pro Glu Pro Cys Ser Leu Asn
1025                1030                1035                1040

Pro His Arg Arg Ser Trp Ala Glu Lys Gln Cys Ser Ile Leu Lys Ser
                1045                1050                1055

Ser Val Phe Ser Ile Cys His Ser Lys Val Asp Pro Lys Pro Phe Tyr
            1060                1065                1070

Glu Ala Cys Val His Asp Ser Cys Ser Cys Asp Thr Gly Gly Asp Cys
        1075                1080                1085

Glu Cys Phe Cys Ser Ala Val Ala Ser Tyr Ala Gln Glu Cys Thr Lys
    1090                1095                1100

Glu Gly Ala Cys Val Phe Trp Arg Thr Pro Asp Leu Cys Pro Ile Phe
1105                1110                1115                1120

Cys Asp Tyr Tyr Asn Pro Pro His Glu Cys Glu Trp His Tyr Glu Pro
                1125                1130                1135

Cys Gly Asn Arg Ser Phe Glu Thr Cys Arg Thr Ile Asn Gly Ile His
            1140                1145                1150

Ser Asn Ile Ser Val Ser Tyr Leu Glu Gly Cys Tyr Pro Arg Cys Pro
        1155                1160                1165

Lys Asp Arg Pro Ile Tyr Glu Glu Asp Leu Lys Lys Cys Val Thr Ala
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Asp Lys Cys Gly Cys Tyr Val Glu Asp Thr His Tyr Pro Pro Gly Ala
1185                1190                1195                1200
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Ser Val Pro Thr Glu Glu Thr Cys Lys Ser Cys Val Cys Thr Asn Ser
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Ser Gln Val Val Cys Arg Pro Glu Glu Gly Lys Ile Leu Asn Gln Thr
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Gln Asp Gly Ala Phe Cys Tyr Trp Glu Ile Cys Gly Pro Asn Gly Thr
        1235                1240                1245

Val Glu Lys His Phe Asn Ile Cys Ser Ile Thr Thr Arg Pro Ser Thr
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Leu Thr Thr Phe Thr Thr Ile Thr Leu Pro Thr Thr Pro Thr Ser Phe
1265                1270                1275                1280

Thr Thr Thr Thr Thr Thr Thr Thr Pro Thr Ser Ser Thr Val Leu Ser
                1285                1290                1295

Thr Thr Pro Lys Leu Cys Cys Leu Trp Ser Asp Trp Ile Asn Glu Asp
            1300                1305                1310

His Pro Ser Ser Gly Ser Asp Asp Gly Asp Arg Glu Pro Phe Asp Gly
        1315                1320                1325

Val Cys Gly Ala Pro Glu Asp Ile Glu Cys Arg Ser Val Lys Asp Pro
    1330                1335                1340

His Leu Ser Leu Glu Gln His Gly Gln Lys Val Gln Cys Asp Val Ser
1345                1350                1355                1360

Val Gly Phe Ile Cys Lys Asn Glu Asp Gln Phe Gly Asn Gly Pro Phe
                1365                1370                1375

Gly Leu Cys Tyr Asp Tyr Lys Ile Arg Val Asn Cys Cys Trp Pro Met
            1380                1385                1390

Asp Lys Cys Ile Thr Thr Pro Ser Pro Pro Thr Thr Thr Pro Ser Pro
        1395                1400                1405

Pro Pro Thr Thr Thr Thr Thr Leu Pro Pro Thr Thr Thr Pro Ser Pro
    1410                1415                1420

Pro Thr Thr Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro
1425                1430                1435                1440

Pro Ile Thr Thr Thr Thr Thr Pro Leu Pro Thr Thr Thr Pro Ser Pro
                1445                1450                1455

Pro Ile Ser Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro
            1460                1465                1470

Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Pro Ser Pro Pro Thr
        1475                1480                1485

Thr Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro Pro Met
    1490                1495                1500
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Thr Thr Pro Ile Thr Pro Pro Ala Ser Thr Thr Thr Leu Pro Pro Thr
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Pro Ser Pro Pro Ile Thr Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr
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Pro Ser Ser Pro Ile Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Met
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Thr Thr Pro Ser Pro Thr Thr Thr Pro Ser Ser Pro Ile Thr Thr Thr
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Thr Thr Leu Pro Pro Thr Thr Thr Ser Ser Pro Leu Thr Thr Thr Pro
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Leu Pro Pro Ser Ile Thr Pro Pro Thr Phe Ser Pro Phe Ser Thr Thr
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Thr Pro Thr Thr Pro Cys Val Pro Leu Cys Asn Trp Thr Gly Trp Leu
1780 1785 1790

Asp Ser Gly Lys Pro Asn Phe His Lys Pro Gly Gly Asp Thr Glu Leu
1795 1800 1805

Ile Gly Asp Val Cys Gly Pro Gly Trp Ala Ala Asn Ile Ser Cys Arg

1810 1815 1820

Ala Thr Met Tyr Pro Asp Val Pro Ile Gly Gln Leu Gly Gln Thr Val
1825 1830 1835 1840

Val Cys Asp Val Ser Val Gly Leu Ile Cys Lys Asn Glu Asp Gln Lys
1845 1850 1855

Pro Gly Gly Val Ile Pro Met Ala Phe Cys Leu Asn Tyr Glu Ile Asn
1860 1865 1870

Val Gln Cys Cys Glu Cys Val Thr Gln Pro Thr Thr Met Thr Thr Thr
1875 1880 1885

Thr Thr Glu Asn Pro Thr Pro Pro Thr Thr Thr Pro Ile Thr Thr Thr
1890 1895 1900

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
1905 1910 1915 1920

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
1925 1930 1935

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
1940 1945 1950

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
1955 1960 1965

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
1970 1975 1980

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
1985 1990 1995 2000

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
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Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
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Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
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Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
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Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
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Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
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Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
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Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
2420 2425 2430

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Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
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Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
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Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
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Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
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                2725                2730                2735

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
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Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
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Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
2785 2790 2795 2800

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
2805 2810 2815

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
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Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
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Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
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Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
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Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
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Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
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Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
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Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
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Leu Thr Thr Ser Asn Pro Pro Pro Glu Ser Ser Thr Pro Gln Thr Ser
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Arg Ser Thr Ser Ser Pro Leu Thr Glu Ser Thr Thr Leu Leu Ser Thr
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Leu Pro Pro Ala Ile Glu Met Thr Ser Thr Ala Pro Pro Ser Thr Pro
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Thr Ala Pro Thr Thr Thr Ser Gly Gly His Thr Leu Ser Pro Pro Pro
4260 4265 4270

Ser Thr Thr Thr Ser Pro Pro Gly Thr Pro Thr Arg Gly Thr Thr Thr
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Gly Ser Ser Ser Ala Pro Thr Pro Ser Thr Val Gln Thr Thr Thr Thr
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Ser Ala Trp Thr Pro Thr Pro Thr Pro Leu Ser Thr Pro Ser Ile Ile
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Arg Thr Thr Gly Leu Arg Pro Tyr Pro Ser Ser Val Leu Ile Cys Cys
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Val Leu Asn Asp Thr Tyr Tyr Ala Pro Gly Glu Glu Val Tyr Asn Gly
4340 4345 4350

Thr Tyr Gly Asp Thr Cys Tyr Phe Val Asn Cys Ser Leu Ser Cys Thr
4355 4360 4365

Leu Glu Phe Tyr Asn Trp Ser Cys Pro Ser Thr Pro Ser Pro Thr Pro
4370 4375 4380

Thr Pro Ser Lys Ser Thr Pro Thr Pro Ser Lys Pro Ser Ser Thr Pro
4385 4390 4395 4400

Ser Lys Pro Thr Pro Gly Thr Lys Pro Pro Glu Cys Pro Asp Phe Asp
4405 4410 4415

Pro Pro Arg Gln Glu Asn Glu Thr Trp Trp Leu Cys Asp Cys Phe Met
4420 4425 4430

Ala Thr Cys Lys Tyr Asn Asn Thr Val Glu Ile Val Lys Val Glu Cys
4435 4440 4445

Glu Pro Pro Pro Met Pro Thr Cys Ser Asn Gly Leu Gln Pro Val Arg
4450 4455 4460

Val Glu Asp Pro Asp Gly Cys Cys Trp His Trp Glu Cys Asp Cys Tyr
4465 4470 4475 4480

Cys Thr Gly Trp Gly Asp Pro His Tyr Val Thr Phe Asp Gly Leu Tyr
4485 4490 4495

Tyr Ser Tyr Gln Gly Asn Cys Thr Tyr Val Leu Val Glu Glu Ile Ser
4500 4505 4510

Pro Ser Val Asp Asn Phe Gly Val Tyr Ile Asp Asn Tyr His Cys Asp
4515 4520 4525

Pro Asn Asp Lys Val Ser Cys Pro Arg Thr Leu Ile Val Arg His Glu
4530 4535 4540

Thr Gln Glu Val Leu Ile Lys Thr Val His Met Met Pro Met Gln Val
4545 4550 4555 4560

Gln Val Gln Val Asn Arg Gln Ala Val Ala Leu Pro Tyr Lys Lys Tyr
4565 4570 4575

Gly Leu Glu Val Tyr Gln Ser Gly Ile Asn Tyr Val Val Asp Ile Pro
4580 4585 4590

Glu Leu Gly Val Leu Val Ser Tyr Asn Gly Leu Ser Phe Ser Val Arg

4595 4600 4605

Leu Pro Tyr His Arg Phe Gly Asn Asn Thr Lys Gly Gln Cys Gly Thr
4610 4615 4620

Cys Thr Asn Thr Thr Ser Asp Asp Cys Ile Leu Pro Ser Gly Glu Ile
4625 4630 4635 4640

Val Ser Asn Cys Glu Ala Ala Ala Asp Gln Trp Leu Val Asn Asp Pro
4645 4650 4655

Ser Lys Pro His Cys Pro His Ser Ser Ser Thr Thr Lys Arg Pro Ala
4660 4665 4670

Val Thr Val Pro Gly Gly Gly Lys Thr Thr Pro His Lys Asp Cys Thr
4675 4680 4685

Pro Ser Pro Leu Cys Gln Leu Ile Lys Asp Ser Leu Phe Ala Gln Cys
4690 4695 4700

His Ala Leu Val Pro Pro Gln His Tyr Tyr Asp Ala Cys Val Phe Asp
4705 4710 4715 4720

Ser Cys Phe Met Pro Gly Ser Ser Leu Glu Cys Ala Ser Leu Gln Ala
4725 4730 4735

Tyr Ala Ala Leu Cys Ala Gln Gln Asn Ile Cys Leu Asp Trp Arg Asn
4740 4745 4750

His Thr His Gly Ala Cys Leu Val Glu Cys Pro Ser His Arg Glu Tyr
4755 4760 4765

Gln Ala Cys Gly Pro Ala Glu Glu Pro Thr Cys Lys Ser Ser Ser Ser
4770 4775 4780

Gln Gln Asn Asn Thr Val Leu Val Glu Gly Cys Phe Cys Pro Glu Gly
4785 4790 4795 4800

Thr Met Asn Tyr Ala Pro Gly Phe Asp Val Cys Val Lys Thr Cys Gly
4805 4810 4815

Cys Val Gly Pro Asp Asn Val Pro Arg Glu Phe Gly Glu His Phe Glu
4820 4825 4830

Phe Asp Cys Lys Asn Cys Val Cys Leu Glu Gly Gly Ser Gly Ile Ile
4835 4840 4845

Cys Gln Pro Lys Arg Cys Ser Gln Lys Pro Val Thr His Cys Val Glu
4850 4855 4860

Asp Gly Thr Tyr Leu Ala Thr Glu Val Asn Pro Ala Asp Thr Cys Cys
4865 4870 4875 4880

Asn Ile Thr Val Cys Lys Cys Asn Thr Ser Leu Cys Lys Glu Lys Pro
4885 4890 4895

Ser Val Cys Pro Leu Gly Phe Glu Val Lys Ser Lys Met Val Pro Gly
4900 4905 4910

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Arg Cys Cys Pro Phe Tyr Trp Cys Glu Ser Lys Gly Val Cys Val His
        4915                4920                4925

Gly Asn Ala Glu Tyr Gln Pro Gly Ser Pro Val Tyr Ser Ser Lys Cys
    4930                4935                4940

Gln Asp Cys Val Cys Thr Asp Lys Val Asp Asn Asn Thr Leu Leu Asn
4945                4950                4955                4960

Val Ile Ala Cys Thr His Val Pro Cys Asn Thr Ser Cys Ser Pro Gly
                4965                4970                4975

Phe Glu Leu Met Glu Ala Pro Gly Glu Cys Cys Lys Lys Cys Glu Gln
            4980                4985                4990

Thr His Cys Ile Ile Lys Arg Pro Asp Asn Gln His Val Ile Leu Lys
        4995                5000                5005

Pro Gly Asp Phe Lys Ser Asp Pro Lys Asn Asn Cys Thr Phe Phe Ser
    5010                5015                5020

Cys Val Lys Ile His Asn Gln Leu Ile Ser Ser Val Ser Asn Ile Thr
5025                5030                5035                5040

Cys Pro Asn Phe Asp Ala Ser Ile Cys Ile Pro Gly Ser Ile Thr Phe
                5045                5050                5055

Met Pro Asn Gly Cys Cys Lys Thr Cys Thr Pro Arg Asn Glu Thr Arg
            5060                5065                5070

Val Pro Cys Ser Thr Val Pro Val Thr Thr Glu Val Ser Tyr Ala Gly
        5075                5080                5085

Cys Thr Lys Thr Val Leu Met Asn His Cys Ser Gly Ser Cys Gly Thr
    5090                5095                5100

Phe Val Met Tyr Ser Ala Lys Ala Gln Ala Leu Asp His Ser Cys Ser
5105                5110                5115                5120

Cys Cys Lys Glu Glu Lys Thr Ser Gln Arg Glu Val Val Leu Ser Cys
                5125                5130                5135

Pro Asn Gly Gly Ser Leu Thr His Thr Tyr Thr His Ile Glu Ser Cys
            5140                5145                5150

Gln Cys Gln Asp Thr Val Cys Gly Leu Pro Thr Gly Thr Ser Arg Arg
        5155                5160                5165

Ala Arg Arg Ser Pro Arg His Leu Gly Ser Gly
    5170                5175
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<210> 1069
<211> 1173
<212> DNA
<213> Homo sapiens

<400> 1069
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gagtcttggt tgccaaacag atttgcagat caaggagaac ccaggagttt caaagaagcg 180
ctagtaaggt ctctgagatc cttgcactag ctacatcctc agggtaggag gaagatggct 240
tccagaagca tgcggctgct cctattgctg agctgcctgg ccaaaacagg agtcctgggt 300
gatatcatca tgagacccag ctgtgctcct ggatggtttt accacaagtc caattgctat 360
ggttacttca ggaagctgag gaactggtct gatgccgagc tcgagtgtca gtcttacgga 420
aacggagccc acctggcatc tatcctgagt ttaaaggaag ccagcaccat agcagagtac 480
ataagtggct atcagagaag ccagccgata tggattggcc tgcacgaccc acagaagagg 540
cagcagtggc agtggattga tggggccatg tatctgtaca gatcctggtc tggcaagtcc 600
atgggtggga acaagcactg tgctgagatg agctccaata acaacttttt aacttggagc 660
agcaacgaat gcaacaagcg ccaacacttc ctgtgcaagt accgaccata gagcaagaat 720
caagattctg ctaactcctg cacagccccg tcctcttcct ttctgctagc ctggctaaat 780
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taaatgtttg ccccgccatc cctttccaca gtatccttct tccctcctcc cctgtctctg 960
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cataagaagt aaagatttga agacagaagg aagaaactca ggagtaagct tctagccccc 1080
ttcagcttct acacccttct gccctctctc cattgcctgc accccacccc agccactcaa 1140
ctcctgcttg tttttccttt ggccatggga aag 1173

<210> 1070
<211> 158
<212> PRT
<213> Homo sapiens

<400> 1070
Met Ala Ser Arg Ser Met Arg Leu Leu Leu Leu Leu Ser Cys Leu Ala
5 10 15

Lys Thr Gly Val Leu Gly Asp Ile Ile Met Arg Pro Ser Cys Ala Pro
20 25 30

Gly Trp Phe Tyr His Lys Ser Asn Cys Tyr Gly Tyr Phe Arg Lys Leu
35 40 45

Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
50 55 60

Ala His Leu Ala Ser Ile Leu Ser Leu Lys Glu Ala Ser Thr Ile Ala
65 70 75 80

Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
85 90 95

His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
100 105 110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
115 120 125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
130 135 140

Glu Cys Asn Lys Arg Gln His Phe Leu Cys Lys Tyr Arg Pro
145 150 155

<210> 1071
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 1071
gcacgaggcc aaacagattt gcagatcaag gagaacccag gagtttcaaa gaagcgctag 60
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gaagcatgcg gctgctccta ttgctgagct gcctggccaa aacaggagtc ctgggtgata 180
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gtgggaacaa gcactgtgct gagatgagct ccaataacaa ctttttaact tggagcagca 540
acgaatgcaa caagcgccaa cacttcctgt gcaagtaccg accatagagc aagaatcaag 600
attctgctaa ctcctgcaca gccccgtcct cttcctttct gctagcctgg ctaaatctgc 660
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agaagtaaag atttgaagac agaaggaaga aactcaggag taagcttcta gaccccttca 960
gcttctacac ccttctgccc tctctccatt gcctgcaccc caccccagcc actcaactcc 1020
tgcttgtttt tcctttggcc ataggaaggt ttaccagtag aatccttgct aggttgatgt 1080
gggccataca ttcctttaat aaaccattgt gtac 1114

<210> 1072
<211> 1152
<212> DNA
<213> Homo sapiens

<400> 1072
actggagaca ctgaagaagg caggggccct tagagtcttg gttgccaaac agatttgcag 60
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agctacatcc tcagggtagg aggaagatgg cttccagaag catgcggctg ctcctattgc 180
tgagctgcct ggccaaaaca ggagtcctgg gtgatatcat catgagaccc agctgtgctc 240
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ctgatgccga gctcgagtgt cagtcttacg gaaacggagc ccacctggca tctatcctga 360
gtttaaagga agccagcacc atagcagagt acataagtgg ctatcagaga agccagccga 420
tatggattgg cctgcacgac ccacagaaga ggcagcagtg gcagtggatt gatggggcca 480
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tgagctccaa taacaacttt ttaacttgga gcagcaacga atgcaacaag cgccaacact 600
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gcaaactaag agtgataagg gccctactac actggctttt ttaggcttag agacagaaac 780
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cattgtgtac at 1152

<210> 1073
<211> 474

<212> DNA
<213> Homo sapiens

<400> 1073
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tgctatggtt acttcaggaa gctgaggaac tggtctgatg ccgagctcga gtgtcagtct 180
tacggaaacg gagcccacct ggcatctatc ctgagtttaa aggaagccag caccatagca 240
gagtacataa gtggctatca gagaagccag ccgatatgga ttggcctgca cgacccacag 300
aagaggcagc agtggcagtg gattgatggg gccatgtatc tgtacagatc ctggtctggc 360
aagtccatgg gtgggaacaa gcactgtgct gagatgagct ccaataacaa ctttttaact 420
tggagcagca acgaatgcaa caagcgccaa cacttcctgt gcaagtaccg acca 474

<210> 1074
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 1074
gcacgaggcc aaacagattt gcagatcaag gagaacccag gagtttcaaa gaagcgctag 60
taaggtctct gagatccttg cactagctac atcctcaggg taggaggaag atggcttcca 120
gaagcatgcg gctgctccta ttgctgagct gcctggccaa aacaggagtc ctgggtgata 180
tcatcatgag acccagctgt gctcctggat ggttttacca caagtccaat tgctatggtt 240
acttcaggaa gctgaggaac tggtctgatg ccgagctcga gtgtcagtct tacggaaacg 300
gagcccacct ggcatctatc ctgagtttaa aggaagccag caccatagca gagtacataa 360
gtggctatca gagaagccag ccgatatgga ttggcctgca cgacccacag aagaggcagc 420
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agaagtaaag atttgaagac agaaggaaga aactcaggag taagcttcta gaccccttca 960
gcttctacac ccttctgccc tctctccatt gcctgcaccc caccccagcc actcaactcc 1020
tgcttgtttt tcctttggcc ataggaaggt ttaccagtag aatccttgct aggttgatgt 1080
gggccataca ttcctttaat aaaccattgt gtac 1114

<210> 1075
<211> 614
<212> DNA
<213> Homo sapiens

<400> 1075
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cagggtagga ggaagatggc ttccagaagc atgcggctgc tcctattgct gagctgcctg 180
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gccagcacca tagcagagta cataagtggc tatcagagaa gccagccgat atggattggc 420
ctgcacgacc cacagaagag gcagcagtgg cagtggattg atggggccat gtatctgtac 480
agatcctggt ctggcaagtc catgggtggg aacaagcact gtgctgagat gagctccaat 540
aacaactttt taacttggag cagcaacgaa tgcaacaagc gccaacactt cctgtgcaag 600
taccgaccat agag 614

<210> 1076

<211> 3345
<212> DNA
<213> Homo sapiens

<400> 1076
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cttcttatgc tttatttggc aactggatat ggccaagagg ggaagtttag tggacccctg 180
aaacccatga cattttctat ttatgaaggc caagaaccga gtcaaattat attccagttt 240
aaggccaatc ctcctgctgt gacttttgaa ctaactgggg agacagacaa catatttgtg 300
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cattaaatat tctgtacatt ttttctttat caaggagata tatcagtgtt gtctcataga 3180

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gaaaaataaa taaataaaag aacagccttt tgcggccgcg aattc                 3345

<210> 1077
<211> 158
<212> PRT
<213> Homo sapiens

<400> 1077
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Lys Thr Gly Val Leu Gly Asp Ile Ile Met Arg Pro Ser Cys Ala Pro
            20                  25                  30

Gly Trp Phe Tyr His Lys Ser Asn Cys Tyr Gly Tyr Phe Arg Lys Leu
        35                  40                  45

Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
    50                  55                  60

Ala His Leu Ala Ser Ile Leu Ser Leu Lys Glu Ala Ser Thr Ile Ala
65                  70                  75                  80

Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
                85                  90                  95

His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
            100                 105                 110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
        115                 120                 125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
    130                 135                 140

Glu Cys Asn Lys Arg Gln His Phe Leu Cys Lys Tyr Arg Pro
145                 150                 155


<210> 1078
<211> 158
<212> PRT
<213> Homo sapiens

<400> 1078
Met Ala Ser Arg Ser Met Arg Leu Leu Leu Leu Leu Ser Cys Leu Ala
                5                   10                  15

Lys Thr Gly Val Leu Gly Asp Ile Ile Met Arg Pro Ser Cys Ala Pro
            20                  25                  30

Gly Trp Phe Tyr His Lys Ser Asn Cys Tyr Gly Tyr Phe Arg Lys Leu
        35                  40                  45

Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
    50                  55                  60
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Ala His Leu Ala Ser Ile Leu Ser Leu Lys Glu Ala Ser Thr Ile Ala
65 70 75 80

Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
85 90 95

His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
100 105 110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
115 120 125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
130 135 140

Glu Cys Asn Lys Arg Gln His Phe Leu Cys Lys Tyr Arg Pro
145 150 155

<210> 1079
<211> 158
<212> PRT
<213> Homo sapiens

<400> 1079
Met Ala Ser Arg Ser Met Arg Leu Leu Leu Leu Leu Ser Cys Leu Ala
5 10 15

Lys Thr Gly Val Leu Gly Asp Ile Ile Met Arg Pro Ser Cys Ala Pro
20 25 30

Gly Trp Phe Tyr His Lys Ser Asn Cys Tyr Gly Tyr Phe Arg Lys Leu
35 40 45

Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
50 55 60

Ala His Leu Ala Ser Ile Leu Ser Leu Lys Glu Ala Ser Thr Ile Ala
65 70 75 80

Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
85 90 95

His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
100 105 110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
115 120 125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
130 135 140

Glu Cys Asn Lys Arg Gln His Phe Leu Cys Lys Tyr Arg Pro
145 150 155

<210> 1080

<211> 158
<212> PRT
<213> Homo sapiens

<400> 1080
Met Ala Ser Arg Ser Met Arg Leu Leu Leu Leu Leu Ser Cys Leu Ala
5 10 15

Lys Thr Gly Val Leu Gly Asp Ile Ile Met Arg Pro Ser Cys Ala Pro
20 25 30

Gly Trp Phe Tyr His Lys Ser Asn Cys Tyr Gly Tyr Phe Arg Lys Leu
35 40 45

Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
50 55 60

Ala His Leu Ala Ser Ile Leu Ser Leu Lys Glu Ala Ser Thr Ile Ala
65 70 75 80

Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
85 90 95

His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
100 105 110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
115 120 125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
130 135 140

Glu Cys Asn Lys Arg Gln His Phe Leu Cys Lys Tyr Arg Pro
145 150 155

<210> 1081
<211> 832
<212> PRT
<213> Homo sapiens

<400> 1081
Met Ile Leu Gln Ala His Leu His Ser Leu Cys Leu Leu Met Leu Tyr
5 10 15

Leu Ala Thr Gly Tyr Gly Gln Glu Gly Lys Phe Ser Gly Pro Leu Lys
20 25 30

Pro Met Thr Phe Ser Ile Tyr Glu Gly Gln Glu Pro Ser Gln Ile Ile
35 40 45

Phe Gln Phe Lys Ala Asn Pro Pro Ala Val Thr Phe Glu Leu Thr Gly
50 55 60

Glu Thr Asp Asn Ile Phe Val Ile Glu Arg Glu Gly Leu Leu Tyr Tyr
65 70 75 80

Asn Arg Ala Leu Asp Arg Glu Thr Arg Ser Thr His Asn Leu Gln Val

```
                85                  90                  95

Ala Ala Leu Asp Ala Asn Gly Ile Ile Val Glu Gly Pro Val Pro Ile
            100                 105                 110

Thr Ile Glu Val Lys Asp Ile Asn Asp Asn Arg Pro Thr Phe Leu Gln
        115                 120                 125

Ser Lys Tyr Glu Gly Ser Val Arg Gln Asn Ser Arg Pro Gly Lys Pro
    130                 135                 140

Phe Leu Tyr Val Asn Ala Thr Asp Leu Asp Asp Pro Ala Thr Pro Asn
145                 150                 155                 160

Gly Gln Leu Tyr Tyr Gln Ile Val Ile Gln Leu Pro Met Ile Asn Asn
                165                 170                 175

Val Met Tyr Phe Gln Ile Asn Asn Lys Thr Gly Ala Ile Ser Leu Thr
            180                 185                 190

Arg Glu Gly Ser Gln Glu Leu Asn Pro Ala Lys Asn Pro Ser Tyr Asn
        195                 200                 205

Leu Val Ile Ser Val Lys Asp Met Gly Gly Gln Ser Glu Asn Ser Phe
    210                 215                 220

Ser Asp Thr Thr Ser Val Asp Ile Ile Val Thr Glu Asn Ile Trp Lys
225                 230                 235                 240

Ala Pro Lys Pro Val Glu Met Val Glu Asn Ser Thr Asp Pro His Pro
                245                 250                 255

Ile Lys Ile Thr Gln Val Arg Trp Asn Asp Pro Gly Ala Gln Tyr Ser
            260                 265                 270

Leu Val Asp Lys Glu Lys Leu Pro Arg Phe Pro Phe Ser Ile Asp Gln
        275                 280                 285

Glu Gly Asp Ile Tyr Val Thr Gln Pro Leu Asp Arg Glu Glu Lys Asp
    290                 295                 300

Ala Tyr Val Phe Tyr Ala Val Ala Lys Asp Glu Tyr Gly Lys Pro Leu
305                 310                 315                 320

Ser Tyr Pro Leu Glu Ile His Val Lys Val Lys Asp Ile Asn Asp Asn
                325                 330                 335

Pro Pro Thr Cys Pro Ser Pro Val Thr Val Phe Glu Val Gln Glu Asn
            340                 345                 350

Glu Arg Leu Gly Asn Ser Ile Gly Thr Leu Thr Ala His Asp Arg Asp
        355                 360                 365

Glu Glu Asn Thr Ala Asn Ser Phe Leu Asn Tyr Arg Ile Val Glu Gln
    370                 375                 380

Thr Pro Lys Leu Pro Met Asp Gly Leu Phe Leu Ile Gln Thr Tyr Ala
385                 390                 395                 400
```

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Gly Met Leu Gln Leu Ala Lys Gln Ser Leu Lys Lys Gln Asp Thr Pro
                405                 410                 415

Gln Tyr Asn Leu Thr Ile Glu Val Ser Asp Lys Asp Phe Lys Thr Leu
            420                 425                 430

Cys Phe Val Gln Ile Asn Val Ile Asp Ile Asn Asp Gln Ile Pro Ile
        435                 440                 445

Phe Glu Lys Ser Asp Tyr Gly Asn Leu Thr Leu Ala Glu Asp Thr Asn
    450                 455                 460

Ile Gly Ser Thr Ile Leu Thr Ile Gln Ala Thr Asp Ala Asp Glu Pro
465                 470                 475                 480

Phe Thr Gly Ser Ser Lys Ile Leu Tyr His Ile Ile Lys Gly Asp Ser
                485                 490                 495

Glu Gly Arg Leu Gly Val Asp Thr Asp Pro His Thr Asn Thr Gly Tyr
            500                 505                 510

Val Ile Ile Lys Lys Pro Leu Asp Phe Glu Thr Ala Ala Val Ser Asn
        515                 520                 525

Ile Val Phe Lys Ala Glu Asn Pro Glu Pro Leu Val Phe Gly Val Lys
    530                 535                 540

Tyr Asn Ala Ser Ser Phe Ala Lys Phe Thr Leu Ile Val Thr Asp Val
545                 550                 555                 560

Asn Glu Ala Pro Gln Phe Ser Gln His Val Phe Gln Ala Lys Val Ser
                565                 570                 575

Glu Asp Val Ala Ile Gly Thr Lys Val Gly Asn Val Thr Ala Lys Asp
            580                 585                 590

Pro Glu Gly Leu Asp Ile Ser Tyr Ser Leu Arg Gly Asp Thr Arg Gly
        595                 600                 605

Trp Leu Lys Ile Asp His Val Thr Gly Glu Ile Phe Ser Val Ala Pro
    610                 615                 620

Leu Asp Arg Glu Ala Gly Ser Pro Tyr Arg Val Gln Val Val Ala Thr
625                 630                 635                 640

Glu Val Gly Gly Ser Ser Leu Ser Ser Val Ser Glu Phe His Leu Ile
                645                 650                 655

Leu Met Asp Val Asn Asp Asn Pro Pro Arg Leu Ala Lys Asp Tyr Thr
            660                 665                 670

Gly Leu Phe Phe Cys His Pro Leu Ser Ala Pro Gly Ser Leu Ile Phe
        675                 680                 685

Glu Ala Thr Asp Asp Asp Gln His Leu Phe Arg Gly Pro His Phe Thr
    690                 695                 700
```

```
Phe Ser Leu Gly Ser Gly Ser Leu Gln Asn Asp Trp Glu Val Ser Lys
705                 710                 715                 720

Ile Asn Gly Thr His Ala Arg Leu Ser Thr Arg His Thr Asp Phe Glu
                725                 730                 735

Glu Arg Ala Tyr Val Val Leu Ile Arg Ile Asn Asp Gly Gly Arg Pro
            740                 745                 750

Pro Leu Glu Gly Ile Val Ser Leu Pro Val Thr Phe Cys Ser Cys Val
        755                 760                 765

Glu Gly Ser Cys Phe Arg Pro Ala Gly His Gln Thr Gly Ile Pro Thr
    770                 775                 780

Val Gly Met Ala Val Gly Ile Leu Leu Thr Thr Leu Leu Val Ile Gly
785                 790                 795                 800

Ile Ile Leu Ala Val Val Phe Ile Arg Ile Lys Lys Asp Lys Gly Lys
                805                 810                 815

Asp Asn Val Glu Ser Ala Gln Ala Ser Glu Val Lys Pro Leu Arg Ser
            820                 825                 830
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<210> 1082
<211> 265
<212> DNA
<213> Homo sapiens

<400> 1082

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gaaacatgga ctgcccctta aattttgact gtcctaaaaa cctatttctg atttataata 60
tgctgcctga taaagtgaca ctagatgtac cagctgagtg tttaatcttc ccatcacaga 120
tcagatttga gcattaacag gtattttcac atacttgact tcaatatgct taaagtgagg 180
aacaagcaat taagtgggga ctaaaaatgt tggcctttaa gcaatttgtc ataaatcttc 240
acaataaaga ataaatcaat gtttt                                       265
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<210> 1083
<211> 44
<212> PRT
<213> Homo sapiens

<400> 1083

```
Asn Met Asp Cys Pro Leu Asn Phe Asp Cys Pro Lys Asn Leu Phe Leu
                5                   10                  15

Ile Tyr Asn Met Leu Pro Asp Lys Val Thr Leu Asp Val Pro Ala Glu
            20                  25                  30

Cys Leu Ile Phe Pro Ser Gln Ile Arg Phe Glu His
        35                  40
```